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Myographiæ Comparatæ

SPECIMEN:

James O R, A *Hunter*
Comparative Description

Of All the

MUSCLES

IN A

Man and in a Quadruped.

Shewing

Their Discoverer, Origin, Progress,
Insertion, Use, and Difference.

To which is added,

An Account of the MUSCLES
peculiar to a Woman.

With an Etymological Table, and several
Useful Index's.

By JAMES DOUGLAS, M. D.

L O N D O N :

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Jos: Banks

THE PREFACE.

THO' Myography *has been*
often cultivated by indu-
strious and good Hands,
yet it still affords a fertile Field of
Reformation and Improvement: Of
this, 'tis presumed, this small Trea-
tise will be sufficient Evidence. Not
that I lay claim to the vain Pre-
sumption of having corrected all the
Mistakes, and supplied all the De-
fects of those who have wrote upon
this Subject; That I leave to finish-
ing Hands.

The P R E F A C E.

I question not, but that I may be liable to Correction in many things; or at least, that a better and more dextrous Hand may rectifie some of my Descriptions.

The Encouragement I had to publish these Descriptions was, that I took them all from the Life; I mean, from Ocular Inspection in Dissection; without taking any of them upon the Credit of another. For before I was determined, as to the Origin, Progress, and Insertion of the Muscles, I raised them on both sides of above twelve Subjects, both Foetus's and Adults; still committing to Paper what I observed. I read often, and carefully perused all the Authors that have wrote upon the Muscles, from the immortal Galen down to this Time; and after comparing all the Descriptions one with another, I singled out such as I found conformable to the Life, that being the Standard I always go by; and according as that directed

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rected me, I have here rectified what I humbly conceived to be their Mistakes, (but without mentioning them as theirs) and supplied their Defects as far as my Observations went.

If any one has a mind to Censure these Descriptions as false, I only beg leave to acquaint him before hand, that I will always appeal to the Ocular Inspection of Subjects, and if that gives it against me, I shall willingly retract, and acknowledge my Error. Whatever is offered against them, that is not accompanied with that, I shall pay but little regard to it. And to justify in some measure the Conformity of these Descriptions to exact Observation and Matter of Fact, I still keep by me the half of one of my Subjects, artfully prepared, which will afford me means of Demonstration when a fresh Subject is not at hand.

The PREFACE.

And here I cannot but take notice, that in the many Bodies I have viewed, I have not met with that frequency of *Lusus Naturæ*, that's so commonly talk'd of, especially by those who are loth to take the pains to make a strict and narrow Inquiry in the Dissection of these useful Machines of Motion. 'Tis true indeed, that Nature does sometimes sport and vary in the Composition of a Muscle. Thus I have observed two *Palmaris's* in one Hand; I have found three Heads to the *Biceps Cubiti*, the uncommon Head arising from the middle of the *Os Humeri*; I have seen one of the *Interossei* come from the upper part of the *Carpus* externally, &c. The other Instances I could adduce, I refer to another Occasion.

As for the Comparative Part of this Treatise, or the Interlacing the Descriptions of the Humane Muscles with those of the Canine, that I presume needs no Apology.
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The many useful Discoveries drawn from the Dissection of Quadrupeds, the Knowledge of the true Structure of divers Parts of the Body, of the Course of the Blood and Chyle, and of the Use and proper Action of the Parts that's chiefly owing to this sort of Dissection: These, I say, give a very warrantable Plea for insisting upon it, tho' it may be censur'd by the Vulgar.

As for what relates particularly to the Muscles of a Dog, or that Quadruped which I have chose for my Subject, I was induced to make the Parallel between those of a Man, and those of that Animal, by two Reasons.

I. One is the Opportunity of shewing the Contrivance and Use of the Muscles subservient to the peculiar Motions of a Dog, and such as its different way of living did necessarily require.

For where Nature has acted uniformly, I am silent; and that indeed is frequently met with, there being an exact Similitude between the Make and Structure of many of the Muscles of a Man, and that of the corresponding Muscles in a Dog: But where any difference appears in respect of Origin or Insertion, 'tis there (and there only) that my Comparative Remarks take place.

2. The other Reason is taken from the Benefit and Conveniency of the young Students of Anatomy, who may readily procure so common a Subject; and if they once acquire a Dexterity of raising the Muscles in it, may promise themselves an equal Ability in raising those of the Humane Body, after the Dissection of one, or two at most.

Galen, the great Head of the Anatomical School, both practis'd himself, and recommended to his Scholars;

Scholars the frequent Dissection of Monkeys and Apes, as highly Conduſive to a more perfect Knowledge of the admirable Structure of the Organs of the Human Body. I do not affirm, as ſome would have it, that he never diſſected any thing elſe: For not to mention the many other Reaſons that might be offered to the contrary, the very Descriptions he gives of ſeveral Muſcles ſuit only to the Human Body, and differ from all the Quadrupeds; but becauſe that ever renowned Author has left us on Record an Account of the Muſcles in an Ape, as well as in a Man, I deſire the Reader to remark, That the Descriptions of the Muſcles in his *Adminiſtrationes Anatomicae*, and in his Book *De Diſſectione Muſculorum*, are chiefly taken from Apes: But the Account we have of them in his admirable Book, *De Uſu Partium*, are all taken from Men. 'Tis pity the

The PREFACE.

Great Vesalius did not consider this.

The Method I have here observed is the same with that made use of at Surgeons-Hall, in this City, the most Noted and most Illustrious School of Anatomy now in Europe. As so weighty an Authority was more than sufficient to determine my Choice, so I can't but say, that it seems to be the best accommodated to the Capacity of young Students, and to be concerted in the most easie and distinct way.

I have purposely omitted the Anatomical Administration, or the manner of Raising the Muscles, upon the Consideration, that 'twould have enlarged the Bulk of this Treatise, which is designed for a Manual fit to be carry'd about to publick Dissections, and would have inflamed its Price, without doing the young Student any additional Service; it being impossible to make
any

any an Operator in this way by Oral Precepts; Manual Operation, and the seeing one Dissect, are the only effectual Means for the compassing that End.

This Comparative Survey I design to continue through all the six Parts, into which the Human Body is Anatomically divided: The Specimen now offered upon the Muscles being what I had first drawn up, and withal a not improper Fore-runner to the remaining Parts.

It remains now to acquaint the Reader, That all the Muscles discovered or described by the immortal Galen, stand here without any Name or Mark affixed: Those discovered since have the Names of their respective Discoverers joined to them: And those which I humbly conceive to have lain hitherto undiscovered, and have been brought to light by my assiduous

*Application to this part of Anatomy, without any assistance from other Men or Books, have three Stars set after their Names. Tho' I've joined the Discoverer's Name to the Title or Denomination of the Muscle, yet I take the liberty to give my own Descriptions, without mentioning in what particular point it is that I depart from them. Indeed where I find the Descriptions agreeable to the Life, or to what Observation I have been able to make, I've kept to them, and particularly in a great many given by the justly Celebrated Mr. Cowper, whose very Words I have often used, it being impossible to find others with more Justice to the Subject. And to the same most accurate and indefatigable Improver of Anatomy am I obliged for the Uses of most of the Muscles, both Humane and Canine. From the Labour and Industry of this worthy Person, who is equally Famous for his wonder-
ful*

ful Dexterity in Dissecting, and great Skill in Designing, we are now daily expecting a compleat Account and History of the Humane Muscles, enriched with abundance of Improvements and new Discoveries, and illustrated with Original Figures, being all done after the Life, by his own Hand.

I've subjoined to this Treatise an Etymological Table of the Muscles, the frequent Reading, and attentive Consideration of which, will render easie and familiar the harsh and not easily remembred Names of many of these Instruments of Motion.

*I have industriously avoided the common fault of multiplying Muscles without necessity. For Example: I have described the Extensors of the Cubit as one Muscle; the Gastrocnæmius and Soleus I make but one Muscle, arising by
four*

four Heads; the Oblique and Transverse Muscles of the Abdomen, in my Opinion, make only three Muscles, and not so many Pairs. Indeed I make four Muscles of the Triceps Femoris, because it has so many distinct Beginnings and Endings, as may be seen in the History of the Muscles it self, to which I hasten.

THE

T H E

Introduction.

BEfore I descend to the Description of each Muscle in particular, I think it requisite, for the benefit of young Beginners, to give a short Account of their Structure and Composition in general; and, by way of Introduction to that, to premise what is meant by a *Fibre* and a *Membrane*; the whole being only an Abridgment of what is found in Authors, who treat of that Subject at large.

A *Fibre* is called in Greek *is*, in Latin *fibra*, which properly signifies those *villi* or strings that hang about the Roots of Plants; but in an Anatomical sense, it may be described a
Substance,

Substance, in figure like a fine Thread, of a tensile and irritable Nature; by the various Terture and Combination of which, all the solid Parts of the Humane Body are framed.

Of these Fibres there are divers kinds, for some are Membranous, some Carnous, some Cartilaginous, some Osseous, and some Nervous; but these three last mentioned belong to another place, whither I refer them. The Carnous Fibres are vascular and hollow, being full of little Cells; they are called *Fibræ motrices*, in as much as they are the chief Organs of Muscular Motion. But of these, and the other Membranous and Tendinous Fibres, more hereafter.

The Difference of these Fibres may be likewise taken from their Situation or Course, with reference to which they are called *Streight*, as running lengthways, or in right Lines; *Circular*, as running round some part, those for Instance, of the *Sphincter* Muscles; *Transverse*, which intersect the streight ones at different Angles; or *Oblique*, which cut both the streight and transverse at unequal Angles.

A Membrane is a broad, thin, white dilatable Substance, interwoven with several sorts of Fibres, like a Web.

It's called in Greek *ἐμβρῶν*, *χρῶν*, and *μενιγξ*; all which Appellations, in the Works of Hippocrates and Galen, denote one and the same thing, being by them indifferently used: But later Writers have appropriated them to particular Membranes; Thus *Hymen* is only given to that circular fold of the inner Coat of the *Vagina Uteri*, placed near its outer Orifice; *Meninx* is only attributed to the Membranes that involve the Brain; *χρῶν* still denotes a Membrane or Coat. Now in English, a Membrane taken in a large sense, comprehends all the *Tegumenta* or Coverings that invest the Solid, or contain the Fluid parts; and these too have their particular Names, according to the different Parts they envelope. Thus the Membrane that covers the *Cranium*, or Skull, is called *Pericranium*; that which lines the inside of the *Thorax*, *Pleura*; that which invests the *Abdomen*, *Peritoneum*; the Membrane which firmly adheres to the surface of all the Bones, *Periostium*. Besides, that

that the Membranes of some particular Parts have also particular Names, as we may see in their History. The Membranes which form the Coat of Membranous Bodies, such as the Stomach, Guts, &c. or the Membranes of the Vessels, containing the Humours, are properly stiled *Coats* and *Vessels*.

All the Membranous Fibres have a sort of Elasticity or Spring, whereby, upon occasion, they can very easily extend, and contract themselves again, as may be observed in the *Peritoneum*, *Stomach* and *Uterus*. The Nervous Filaments interlaced between them, and pouring in the Animal Spirits, make them extremely sensible whence the Ancients were led into a Mistake in affirming, that the Membranes were the true Organs of feeling.

Every Membrane, tho' it appears never so thin, yet 'tis manifestly double, and between the Duplicature the Vessels run. And in the Tissue of their inner Membrane there are placed abundance of small Glands, which separate an Humour for moistening them, and thereby hinder Preternatural
Ad.

Adhesions to the Parts they touch, which always happens to any of the *Viscera*, affected with a *Scirrhus*, or hard Tumor, which in such a case adheres firmly to all the neighbouring parts.

The Use of the Membranes is to wrap up, and cover the Parts, to strengthen 'em, to defend several of them from being hurt by the subjacent Bones, to sustain the Vessels that are ramified upon them, to keep the Parts united; and 'tis worth our Observation, that the admirable Sympathy, or consent of the Parts one with another, depends in a great measure upon their Fibrous Connexions.

All that soft part of the Body, the Vulgar calls *Flesh*, is by Anatomists distinguished into various Parts or Parcels, which they name so many Muscles.

A *Muscle* is nothing but a Fasciculus, or bundle of fleshy and tendinous Fibres, inclosed in a proper Membrane, by means of which all the Motions in a Animal Body are performed.

'Tis

'Tis called *μῦς* by the Greeks, (which Word properly signifies *Mus*, a *Mouse*) and that perhaps from the Likeness some of them have to that Animal when stript of its Skin; but others, with more reason, do derive it from *μυεῖν*, *contrahere*, which is the proper Action of a Muscle.

The whole Body of the Muscle is commonly distinguished into three parts, *viz.* The Head or Beginning, the Body or Belly, and the Tail or Ending; or into the middle, and the two Extremities.

The Head is that part of the Muscle which arises from the most stable part, unto which the Contraction is made; for 'tis a constant Rule, that every Muscle is moved towards its beginning, which thence may be called the Centre of its Motion.

The Origin of a Muscle is, for the most part, tendineo-carnous; sometimes 'tis entirely tendinous, and sometimes it's observed to be only fleshy.

The Tail, or End of a Muscle, is that part of it which is implanted or inserted into the Member which is to be moved. This Extremity is com-

commonly called its Tendon, or *Tendo* in Latin; yet *Fallopins* gives it often the Name of *Chorda*; the Greeks call it *συνδεδωγος*; but at present, by this Word is only meant a thin tendinous Expansion, or Membrane-like Dilatation, sent off from the Tendon of a Muscle, as that of the *Biceps Cubiti*, *Semitendinosus Tibiæ*, &c.

The Substance of a Tendon is the very same with that of the rest of the Muscle; only its Fibres being closely compacted together, for the conveniency perhaps of having a greater number of them inserted into a narrow place, they feel harder, and appear of a whiter colour; so that the fleshy Fibres of a Muscle are only its Tendon divided and loose; and the Tendon is nothing but these very Fibres closely united, as *Spigelius* has most elegantly expressed it.

'Tis very probable, that every single Muscle either begins or ends tendinous, (with this difference, that some few of them end in the *Periostium*, tho' the greatest part do penetrate that Membrane, and are immediately inserted into the Bone) the stronger

stronger and more conspicuous being extended beyond the fleshy part; the slender, and not so discernable, lie either hid under the Flesh, or they are interlaced between its Fibres.

'Tis necessary to know, that the Head and Tail of a Muscle are Terms convertible; for according to the different Situation of the Body, those Extremities do so alter, that the part which was before immoveable and fixed, becomes moveable.

The Belly of a Muscle is the middle part of it, which consists of fleshy Fibres, red, lax, and spongy, as may be distinctly observed in a piece of parboiled Flesh. Now each Fibre is made up of a vast number of little *Fibrillæ*, which are so many very slender hollow Pipes, bound about by small transverse parallel Threads, which divide these hollow *Fibrils* into a great many *Vesiculae*, or Cells, that have no communication one with another, but only afford a place of Entertainment for the Blood and Spirits in the Action of the Muscle. This red colour of the fleshy Fibres is only owing to the Blood they receive; for upon injecting warm Water

Water plentifully into the Arteries, the redness abates, and the Fibres put on the same colour with these distractile Tubes.

The proper constituent Parts of a Muscle are those already described.

The common are Arteries, Veins, Nerves, Lymphaducts, and Fat. The Arteries import the Blood, and the Veins convey it back again to the Heart; the Nerves bring Animal Spirits upon any Impression communicated to them from the Mind; the Lymphaducts, perhaps, carry back the Remains of the nourishing Juice, to be refunded into the Venal Mass; the Fat that's lodged upon and between the Fibres, serves to lubricate and render them more fit for Action.

A Muscle is either single or compound. In the first all the fleshy Fibres run parallel to one another, or in the same direction; in the latter they run in several Planes crossing one another, or in different courses.

All Muscles, which serve for the same motion, are called *Congeneres*, because they assist one another in their Action; and these, which are the Instruments

Instruments of opposite Motions, are named *Antagonistæ*; as for Example: Every *Flexor*, or bending Muscle, has a *Tensor*, or extending Muscle; and it's a constant Observation, that when one of these Muscles is shortned, the other is extended; for the shortning of the Muscle which acts, must needs produce an extension of its Antagonist, or of that which acteth not.

The Use or Action of the Muscles is to perform all the different Motions of the Parts, and that is done by contracting themselves; for when the *Fibrille motrices* are shortned, the moveable part must of necessity be drawn towards the fix'd; or the part from which the Muscle does spring, and that into which it is inserted, must needs be brought nearer each other. But after what particular manner this is transacted, I shall not at present enquire, but refer my inquisitive Reader, who delights in such Speculations, to the Authors who handle that Subject, where their various Conjectures may be seen at large; which, in truth, I am little fond of transcribing. The Account of Muscular

Muscular Motion, given by the great *Bernouillius* late Physician at *Basil*, seems to be the most Natural, and the most agreeable to the Rules of *Mechanism*, of any that has been hitherto advanced; and to repair the Loss that we lie under, of not meeting readily with that incomparable Treatise, the World will speedily see a correct Edition of it, with large Improvements from *Dr. Mead*, whose distinguishing Capacity in the way of Physick and Learning, is accompanied with a Candor and Goodness that affects all who know him.

The Differences of the Muscles being mostly taken from the very same things whence their Names are derived, to avoid all needless Repetitions, I shall refer to the *Etymological Table*, and proceed.

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Extensor Tertii Internodii minimi digiti.

Flexor Primi Internodii Minimi Digiti.

Musculi Minimi Digiti Pedis, II.

Abductor.

Flexor Primi Internodii Minimi Digiti.

Musculus Nasi, I.

Rinæus vel Nasalis.

Musculi Cutis Occipitis, Vid. Musc. Cutis Frontis.

Musculi Occuli, VI.

Abductor.

Adductor.

Depressor.

Elevator.

With the Names and Number of Muscles. xxxi

Elevator.

Obliquus Inferior.

Superior.

Musculi Palmæ Manūs, II.

Palmaris Brevis.

Longus.

Musculi Palpebræ, II.

Aperiens Palpebram

Rectus.

Orbicularis Palpebrarum.

Musculi Penis, II.

Accelerator Urina.

Erector Penis.

Musculi Pharyngis, XII.

Pharyngæus, whose various Orders of Fibers are named as follows:

Cephalo-pharyngæus.

Chondro-pharyngæus.

Crico-pharyngæus.

Glosso-pharyngæus.

Hyo-pharyngæus.

Mylo-pharyngæus.

Pterigo-pharyngæus.

Salpingo-pharyngæus.

Stylo-pharyngæus.

Syndesmo-pharyngæus.

Thyreopharyngæus.

Musculi Pollicis Manūs, IX.

Abductor.

Adductor ad Indicem.

Minimum

Digitum.

Extensor Primi Internodii.

Secundi.

Tertii.

Flexor Primi Internodii.

Secundi.

Tertii.

Musculi Pollicis Pedis, VI.

Abductor.

Adductor.

Extensor Brevis.

Longus.

Flexor Brevis.

Longus.

Musculi Radii, IV.

Pronator Quadratus.

Teres.

Supinator Brevis.

Longus.

Musculus Stapedis,

Vid. Musc. Aur. Intern.

Musculi Scapulæ, III.

Levator Scapulæ.

Rhom.

xxxii An Alphabetical Table of the Parts, &c.

Rhomboides.

Trapezius.

Musculi Tarfi, VI.

Extensor Tarfi Suralis,
vulgò Gastrocnemius
& Solæus.

Extensor Tarfi Minor,
vulgò Plantaris.

Peroneus Primus.

———— *Secundus.*

Tibialis Anticus.

———— *Posticus.*

Musculi Testis, II.

Cremaster.

Dartos.

Musculi Thoracis, XIII.

Cervicalis ascendens.

Costarum Depressores.

———— *Levatores.*

Diaphragma.

Intercostales.

Sacrolumbalis.

Scalenus.

Serratus Inferior Posti-
cus.

———— *Major Anticus.*

———— *Minor Anticus.*

Serratus Superior Posti-
cus.

Subclavius.

Triangularis.

Musculi Tibiæ, XI.

Biceps.

Cruræus.

Gracilis.

Membranosus.

Popliteus.

Rectus.

Sartorius.

Semimembranosus.

Seminervosus.

Vastus Externus.

———— *Internus.*

Musculus Tubæ Eu-
stachianæ,

Musculus Tubæ Novus
vel Palato Salpingæus.

Musculi Vesiçæ, II.

Detrusor Urinæ.

Sphincter Vesiçæ.

Musculi Uvulæ, IV.

Glossostaphilinus.

Palatostaphilinus.

Salpingostaphilinus.

Thyreostaphilinus.

An EXPLICATION of the Abbreviated Names of the Authors quoted in this Treatise, with the Title of their Works to which these Quotations refer, and the Names of the Muscles each of them have discovered.

A Quapendent. Hieronimus Fabritius ab Aquapendente, in his Treatise *De Auditu*, Patavii, 1600. describes the *Musculus Externus Auris*.

Coiter. Volcherus Coiter, in his *Externarum & Internarum Principalium humani corporis partium, Tabulae atque Anatomicae Exercitationes Observationesque variae*, Norimbergae, 1573. describes the *Corrugator*.

Cowp. William Cowper, in his *Myotomia Reformata, or a new Administration of all the Muscles of Human Bodies*. London 1694. describes the

Elevator Labii Inferioris proprius.

Depressor Labii Superioris proprius.

Pterigo-pharyngeus.

Rectus Internus minor.

Interspinales.

Spinalis Lumborum.

Extensor Pollicis Pedis brevis.

Flexor primi Internodii minimi digiti.

His Discovery of the *Costarum Depressores* he was so kind as to communicate unto me.

Diemerbr. Isbrandus de Diemerbroeck, in his *Anatomie Corporis Humani*. Ultrajecti 1672. describes the

Cervicalis Descendens.

Duvern. Josephus Du Verny, in his *Tractatus*

tus

tus de organo Auditûs continens structuram, usum, & morbos omnium Auris partium. Norimbergæ 1684. describes the

Musculus Auris externus.

——— *Stapedis.*

Eustach. Bartholomæus Eustachius, in his Treatise, *De Auditûs Organis*, printed with his *Opuscula Anatomica*, Venetiis 1563. describes the

Musculus Auris Internus.

Fallop. Gabriel Fallopius, in his *Observationes Anatomicae*, Venetiis 1562. describes the *Pyramidalis Abdominis.*

Aperiens Palpebram Rectus.

Mylo-hyoidæus.

Rectus lateralis.

Pterigoidæus externus.

Capitis par tertium.

Erector Clitoridis.

Galen. Claudius Galenus describes all the Muscles mentioned in this Specimen, that have neither a Name nor a Mark affixed to them, in his incomparable Treatises, *De Dissectione Musculorum ad Tyrones*, *De Anatomicis Administrationibus*, and *De Usu Partium Corporis Humani.*

Ja. Silv. Jacobus Sylvius, in his *Opera Medica*, Coloniae Allobrogum 1630. describes the

Massa Carnea seu Musculosa carnis portio.

J. Bapt. Canan. Johannes Baptista Cananus; in his *Musculorum Humani Corporis picturata dissectio*. Ferrariae 1572. describes the

Palmaris brevis.

Jul. Cass. Plac. Julius Casserius Placentinus, in his *De Vocis Auditusque*

Abbreviated Names of the Authors. xxxv

tusque Organis Historia Anatomica. Ferraria 1600. describes the *Externus Auris.*

And in his *Tabula Anatomica*, published by Daniel Bucretius, he describes the

Transversalis Pedis.

Riol. *Johannes Riolanus*, in his *Anthopographia*, Parisiis 1649. describes the

Levator Ani externus.

Psoas parvus.

Angonæus.

Hypothenar.

Thenar.

Spig. *Adrianus Spiegelius*, in his *Fabrica Corporis Humani ex recentione Joh. Antonid. vander Linden*, Amstelodami 1645. describes the *Lingualis.*

Sten. *Nicolaus Stenon*, in his *De Musculis & Glandulis Observatorium Specimen*, Hafniæ 1667. describes the *Costarum Levatores.*

Musculi ad Sacrolumbum accessorii.

Valsalv. *Antonius Maria Valsalva*, in his late Treatise *De Aure Humana Bononia*, 1704. describes the

Crico-pharyngeus.

Glossopharyngeus.

Hyo-pharyngeus.

Thyreo-pharyngeus.

Glossostaphilinus.

Salpingostaphilinus.

Musculus Tuba novus.

Vesal. *Andreas Vesalius*, in his *Humanæ Corporis fabrica*, Basilæ 1543. describes the *Paronum pedis.*

The following Muscles, which have this Mark *** affixed to their Names, were discovered by the Author in his late Application to Myotomy.

Musculus meatus auditorii.

Stylo chondro-hyoidæus.

Chondro-pharyngeus.

Mylo-pharyngeus,

Salpingo.

xxxvi An Explication of the Names, &c.

<i>Salpingo-pharyngæus.</i>	<i>Inter-vertebrales Colli.</i>
<i>Syndesmo-pharyngæus.</i>	<i>Inter-transversales</i>
<i>Palato-staphilinus.</i>	<i>Lumborum.</i>
<i>Thyreo-staphilinus.</i>	<i>Coccygæus.</i>
<i>Inter-transversales</i>	<i>Duo Musculi Vaginæ</i>
<i>Colli.</i>	<i>Uteri.</i>

ERRATA.

Page	Line	Read
9	3	More.
16	3	Texture.
7	12	With this Bone, by two distinct
8	14	Their Union. [Beginnings.
16	12	Little <i>Canthus</i> .
19	24	<i>Labiorum</i> .
49	1	Promoting.
60	1	Distinct.
73	14	<i>Scapula</i> .
140	13	Sixteen Muscles.
174	16	XLIV.
176	1	XLV.
183	18	<i>Epiglottidis</i> .
192	23	The <i>Os hyoides</i> .
193	23	$\tau\epsilon\delta\chi\eta\lambda\odot$
196	15	<i>Dilatatio</i> .
200	22	<i>Crico-arytenoidæus posticus</i> .
204	12	<i>Musculi Vaginæ</i> .
		<i>Delenda</i> .
13	23	dele ;
17	18	***
47	18	***
86	24	The <i>Punctum</i> , or full-point.
148	last	, after demonstrated.

Myographia :

Myographia :
 OR, A
 DESCRIPTION
 OF THE
 MUSCLES.

CHAP. I.
Of the Muscles of the ABDOMEN.

OBLIQUUS DESCENDENS

A Rises by several small Tendons *Origin.*
 from the lower edge of the
 fifth, sixth, seventh and eighth
 Ribs, and tendinous and fleshy from
 all the other inferior Ribs.

B Is
Prælectio prima.

The Muscles of the Abdomen.

Insertion. Is inserted, fleshy into the outer Lip of more than one half of the *Os Ilium*, tendinous into the *Peritoneum*, and by two Tendons into the *Os pubis*; and besides, into all the *Linea alba*, and lower part of the *Os pectoris*, by a broad membranous Tendon.

Use. Its use is to compress all the *Viscera* contained in the *Abdomen*, to pull the Ribs down in expiration, and to turn the Trunk of the Body to one side.

In a Dog it arises from the ten inferior Ribs, and membranous from the top of the Spines of the four upper Vertebrae of the Loins.

OBLIQUUS ASCENDENS

Origin. Arises tendinous from the posterior part of the Spine of the *Os Ilium*, fleshy from the rest of the circular edge of that Bone, tendinous again from the *Peritoneum*, and from the middle and forepart of the *Os pubis*.

Insertion. Is inserted fleshy into the lower edge of the last Rib, and extremities of the two next above it, and tendinous into the Cartilages of all the rest below the *Sternum*, and into the whole length of the *Linea alba*.

Use. Its use is much the same with the former,

The Muscles of the Abdomen.

3

former, the Action of both being much strengthened by the decussation and different course of their carnos Fibres.

In a Dog it arises also from the spinal Processes of the Loins, by a thin tendinous Membrane like the former.

PYRAMIDALIS Fallop.

Arises fleshy from the middle of the Origin forepart of the Os pubis.

Is inserted by a long Tendon at the Insertion union of the *Musculi transversales*, between the *Recti*, a little below the Navel.

Its Use is to promote the discharge Use of Urine, by pulling the lower Belly downwards, and compressing the Bladder, according to its first Discoverer.

In a Dog it is wanting.

RECTUS

Arises from the upper and anterior Origin part of the Os pubis by a thick and short Tendon, and from the same Bone near the Origin of the *Corpus Penis cavernosum* by a long and small one. It soon becomes fleshy.

Is Inserted *Tendineo-carnos* into Insertion. the cartilaginous Extremities of the

The Muscles of the Abdomen.

seventh, sixth and fifth Rib, near the *Os pectoris*.

Use. Its Use is to compress the forepart of the lower Belly, and according to the different Positions of the Body, to bring the Breast nearer the Pubis, and to bend the Trunk forwards, or *è contrà*, as in raising our Bodies from a decumbent Posture.

In a Dog it is inserted fleshy into the lower part of the Sternum, and tendinous into all the rest of that Bone.

TRANSVERSALIS

Origin. Arises by a broad and thin Tendon from the transverse Processes of the *Vertebrae lumborum*, fleshy from the inner edge of the Spine of the *Ilium*, and from the cartilaginous endings of all the Ribs below the *Sternum*.

Insertion. Is Inserted tendinous and fleshy into the *Cartilago ensiformis*, tendinous into all the *Linea alba* and *Peritoneum*, being firmly annexed to a little *Pro-tuberance* in the *Os pubis*, on the outside of the *Musculus abdominis Rectus*.

Use. Its Use is to compress the sides of the *Abdomen*, and to assist in expiration.

N. B.

The Muscles of the Abdomen.

N. B. 1. By the *Peritonæum*, in my description of the *Abdominal Muscles*, I understand what Authors call *Ligamentum pubis*; it being nothing but the firm Union of the Tendons of the oblique and transverse Muscles with the *Peritonæum*, between the anterior part of the Spine of the *Ilium* and the *Os pubis*, whereby a Protrusion, or falling down of the Intestines, &c. in that place, which has nothing else to secure it, is effectually prevented.

2. These three last named Muscles ought not to be reckon'd as so many pairs, but only as so many single Digastrick Muscles, with a broad middle Tendon, and two fleshy Bellies.

3. The *Linea alba* is nothing but part of the Tendons of these oblique and transverse Muscles appearing in the Interstice of the *Recti*, between the *Cartilago Ziphoides* and the *Os pubis*, and adhering firmly to one another in this place; which strict Union occasions the Whiteness to be more conspicuous here than in any other part. So that it was only in compliance with Custom, that I said their Tendons were inserted into this white Line.

4. They are all three perforated a little.

The Muscles of the Testes.

little above the *Os pectinis* to one side, the two oblique in their tendinous, and the transverse in its fleshy part, for the Passage of the *Processus Peritonæi*, receiving the *vas deferens* and the spermatick Vein and Artery, inclosed in a large Membrane distinct from the Elongation of the *Peritoneum*. But besides these, I always observe a Nerve and an Artery pass that way from the *Abdomen* to the *Scrotum*, *Inguen*, and upper part of the *Femur*; from whence some venal Twigs are remitted thro' the same Holes into that Cavity. The *Cremaster* Muscle does only pierce the two oblique Muscles. The surprising and most useful Contrivance of the Perforations or *Rings* of these Muscles shall be enquired into on another occasion.

C H A P. II.

Of the Muscles of the TESTES.

E Ach *Testicle* has one proper Muscle, and one common to both, called

DARTOS

The Muscles of the Penis.

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DARTOS

Which is a thin muscular Membrane, including both the *Testes*.

Its Use is to contract and wrinkle the *Scrotum* by the Action of its fleshy Fibres.

The Muscle proper to each is the

CREMASTER

Which arises from the lowest and *Origin* forepart of the Spine of the *Ilium*, and from the Conjunction of the *Os pubis* with this bony two distinct beginnings.

Is Inserted into the *Tunica vagina* *Insertion* *lis*, upon which it is spread in several distinct Portions.

Its Use is to draw up and suspend *Use* the *Testis*.

CHAP. III.

Of the Muscles of the PENIS.

THE *Penis* has two pair of Muscles, the first is very distinct, the last is inseparably united in its Origin and Progress. The *Transversalis Penis*, mentioned by *Aquapendens*, is only

4 B

part.

The Muscles of the Penis.

part of the *Musculus accelerator urinæ*, arising from the Knob of the *Ischium*; for it is not inserted into the *Cavum ovale*, or Bulb of the *Urethra*, but joins in with this Muscle, of which it makes a second beginning.

ERECTOR PENIS

Origin. Arises tendinous and fleshy from between the *Tubercle* of the *Ischium*, and the beginning of the *Corpus Cavernosum*, and embracing the whole *Crus*,

Insertion. Is Inserted into the external thick Membrane of the two Cavernous Bodies of the *Penis*, near the Union.

Use. Its Use is to pull the *Penis* towards the *Os pubis*, whereby its great Vein is compress'd, and the reflux Blood deny'd its Passage under those Bones, by which means that Member is erected. *Vid.* the Appendix to Mr. Cowper's excellent Treatise of *Myotom. reformat.*

ACCELERATOR URINÆ

Origin. Arises fleshy from the *Sphincter Ani*, and superior part of the *Urethra*, and tendinous from the *Ischium*.

Insertion. Is Inserted into the *Corpus Cavernosum*, from near their beginning to a little below their Union.

. Its

The Muscles of the Penis.

9

Its Use is to compress most adequately the bulbous or largest part of the *Urethra*, and drive the Blood towards the *Glans* for its distention.

A Dog has yet another Muscle besides these two, which may be called *Transversalis*; it's a true *Digastrick* Muscle, having two fleshy Bellies arising from a little round Protuberance in the inferior part of the *Os pubis*, on each side, uniting in a middle Tendon, between the *Os pubis* and the *Penis*. From the particular structure of this Muscle, with a cartilaginous Body placed transversely under the *Ossa pubis*, and the great Vein of the *Penis*, running between the Muscle and it, I could easily account for the *Erectio Penis* in this Animal, who *Copulates* backwards. But that being foreign to the Subject in hand, I will reserve it for a fitter occasion.

C H A P. IV.

*Of the Muscles of the Skin of the
OS OCCIPITIS and OS FRONTIS.*

THE Skin of the Head is moved by one pair of Muscles, and one single Digastrick Muscle.

MUSCULUS FRONTALIS VERUS seu
CORRUGATOR Coiteri.

Origin. Arises fleshy from the process of the *Os frontis*, next the inner or great Angle of the *Orbit*, above the joining of the *Os nasi* and superior process of the *Os maxillare* with this Bone, from thence it runs obliquely outwards and upwards, and

Insertion. Is Inserted into the fleshy part of the subsequent Muscle, some of its *Fibrillae* passing through into the Skin a little higher than the middle Region of the Eye-brows.

Use. Its Use is to smooth the Skin of the Forehead, by pulling it down after the Action of the *Occipito-frontalis*; and when it acts more forcibly, it serves to wrinkle the Skin of the Front, between

Prælectio secunda.

Os occipitis and Os frontis.

11

tween the *Supercilia*, as it happens when we frown or knit the Brows.

This is wanting in a Dog.

OCCIPITO-FRONTALIS

Arises fleshy from the transverse *Origin*. Line of the *Occiput*, opposite to part of the superior Termination of the *Mastoidæus*, and part of the beginning of the *Trapezius* next it, and then tendinous from the rest of that Line backwards, arising after the same manner on the other side, from thence it goes streight up, and soon becoming all tendinous, it covers the two parietal Bones, and the *Ossa Squamosa*, above the temporal Muscles, its outer edge being fasten'd to the *Os jugale* on each side. This broad Tendon near the *Coronal-Suture* grows fleshy, and descends with streight Fibres as low as the *Musculi Orbiculares*.

Is Inserted into the Skin at the Eye-*Insertion*. brows, having sent down between them a narrow fleshy Slip or Elongation, which is continued over the *Ossa nasi* as far its Cartilaginous Part, where its Fibres run off on each side, and terminate in the Skin above the *Musculus nasi proprius*.

*The Muscles of the Eye-lids.**Use.*

When this Digastrick Muscle, which covers all the upper part of the Skull like a Cap, acts, it pulls the Skin of the Head backwards, and at the same time it draws up and wrinkles that of the Forehead, being antagonized by the *Corrugator*.

This Muscle in a Dog is only part of the Membrana Carnosa, that covers all the Skull between the Skin and Muscles.

C H A P. V.

Of the Muscles of the EYE-LIDS.

THE *Palpebræ* have two pair of Muscles; one is proper to the upper Lid, the other is common to both.

*APERIENS PALPEBRAM RECTUS Fallop.**Origin.*

Arises from the upper part of the hole of the *Sphænoidal-Bone*, through which the *Optick Nerve* passes, between the *Attollens* and the *Obliquus major*.

Insertion.

Is Inserted by a broad Tendon into the cartilaginous border of the upper Eye-lid.

Its

The Muscles of the Eye-lids.

13

Its Use is to open the Eye, by draw-*Use.*
ing the Eye-lid up.

ORBICULARIS PALPEBRARUM

Arises tendinous and fleshy from the *Origin.*
edge of the *Os maxillare*, that makes
the lower part of the *Orbit*, at the in-
ner Angle of the Eye. Its Fibres are
spread upon the Under-lid, and a great
part of the *Os mali*, and surrounding
the outer and little *Canthus*, they are
continued over the Upper-lid, and
upper-part of the *Orbit*, at the great
Angle firmly adhering to part of the
Os frontis, and superior process of the
Os maxillare.

Its Use is to shut the Eye, by bring-*Use.*
ing down the Upper-lid, and pulling
up the Lower.

N. B. The *Ciliaris Riol.* is only part
of this Muscle next the *Cilia* or *Tarsi*.

In a Dog it arises tendinous from the
upper part of the *Os jugale*, at the ex-
ternal *Canthus* of the Eye; it divides
and surrounds each Eye-lid with its
fleshy *Fibrillæ*, which acting must ne-
cessarily pull up both Eye-lids, bring
them nearer one another, and shut
them.

C H A P. VI.

Of the Muscles of the EYES.

EACH Eye has six Muscles.

OBLIQUUS SUPERIOR

Origin. Arises from the edge of the Hole that transmits the Optic Nerve tendinous, between the *Elevator* and *Adductor*, from thence it runs streight along the *Os planum* to the upper part of the *Orbit*, at the great *Canthus* where the *Trochlea* is affixed to the *Os frontis*, through which it passes; and turning backwards,

Insertion. Is Inserted tendinous into the *Tunica Sclerotis* behind the Insertion of the *Attollens*.

Use. Its Use is to draw the Globe of the Eye forwards, and to turn its Pupil downwards.

OBLIQUUS INFERIOR

Origin. Arises tendinous from the *Os maxillare*, where it makes the edge of the *Orbit* near its juncture with the *Os mali*, and running obliquely outwards,

Insertion. Is Inserted into the *Sclerotis*, between
the

The Muscles of the Eyes.

15

the Insertion of the *Abductor* and the *Optic Nerve*.

Its Use is to draw the Bulb of the *Use*. Eye forwards, and turn its Pupil upwards. The Uses I have assigned to these two Muscles were first advanced by the ingenious and most accurate Anatomist, Mr. *Cowper*.

ELEVATOR

Arises tendinous and fleshy from the *Origin*.] edge of the *Foramen lacerum* near the *Abductor*.

Is Inserted into the superior and fore- *Insertion*. part of the *Tunica sclerotis* by a thin Tendon.

Its Use is to lift up the Globe of the *Use*. Eye.

DEPRESSOR

Arises tendinous and fleshy from the *Origin*. lower edge of the hole that gives passage to the *Optic Nerve*.

Is Inserted by a thin Tendon into the *Insertion*. *Sclerotis* opposite to the Insertion of the former.

Its Use is to pull the Globe of the *Use*. Eye down.

ADDUCTOR

Arises tendinous and fleshy from the *Origin*. edge of the hole in the *Sphenoidal Bone*; that

The Muscles of the Eyes.

that transmits the *Optic Nerve*, between the *Obliquus major* and the *humilis*.

Insertion. Is Inserted by a thin Tendon into the *Tunica sclerotica* where it respects the great *Canthus*.

Use. Its Use is to bring the Eye toward the Nose.

ABDUCTOR

Origin. Arises tendinous and fleshy from the *Foramen lacerum*, without the Orbit.

Insertion. Is Inserted by a thin Tendon into the *Sclerotis*, where it respects the great *Canthus*.

Use. Its Use is to move the Eye outwards, from the great to the little Angle.

Beside these six, a Dog has two more, of which one belongs to the Globe it self, the other to the *Trochlea* of the Eye; the first is called *Musculus septimus oculi suspensorius*, it arises from the margin of the hole through which the *Optic Nerve* passeth into the Eye, and is Inserted, being divided into four or five fleshy Portions, into the lower part of the *Sclerotica*, below the Termination of the other Muscles. Its Use is to sustain and keep up the Bulb of the Eye, that it mayn't fall too low, and thereby put a stress on the Nerve in this and other

The Muscles of the Nose.

17

other Animals that go much with their Heads down, or feed upon the Ground.

The other I call *Musculus Trochlear proprius*, which is a very small Muscle, arising fleshy near the Origin of the *Obliquus major*, and soon turning into a slender Tendon, is Inserted into the Trochlea, to whose Motions it is subservient. A Description of this Cartilaginous Ring will be given at the end of my Comparative Osteology.

C H A P. VII.

Of the Muscles of the Nose.

THE Cartilaginous part of the Nose has one pair of proper Muscles, and three pair common to it with other parts.

*RINEUS vel NASALIS ****

Arises fleshy from the Extremity of Origin. the *Os nase*, and adjacent part of the *Os maxillare*.

Is Inserted into all the Cartilages of Insertion. the *A/a*.

Its Use is to open and dilate the No-Use. stril, by pulling that part outwards.

The

The Muscles of the Lips.

The first of the common is an Elongation of the *Occipito-frontalis* already described, and serves to draw the Skin of the Nose upwards and backwards.

The second is part of the *Elevator labii superioris proprius*, arising from the upper part of the *Os maxillare*, where it joins the *Os frontis* at the inner *Canthus*.

The third is common to it with the Upper-lip, being part of the *Depressor labii superioris proprius*.

For the motion of a Dog's flat Nose, which is continued to the very extremity of the Maxilla superior, there are no proper Muscles.

C H A P. VIII.

Of the Muscles of the LIPS.

THE Muscles of the Lips are either common or proper. The *common* are inserted into the Angles of the Mouth, where the two Lips join, being equally useful to both; they are three pair in number, and one odd one.

ZYGOMATICUS

Arises fleshy from the *Os mali*, near *Origin*.
its conjunction with the long Process
of the *Os squamosum*.

Is Inserted near the Angle of the Lips. *Insertion*.

Its Use is with its Partner to draw *Use*.
both Lips upwards.

ELEVATOR LABIORUM COMMUNIS

Arises thin and fleshy from the hol. *Origin*.
low of the *Os maxillare*, under the hole
called *Orbiter externus*.

Is Inserted into the Angle of the *Insertion*.
Mouth and Under-lip.

Its Use is to bring the two Lips up- *Use*.
wards.

DEPRESSOR LABIORUM COMMUNIS

Arises broad and fleshy from the *Origin*.
lower edge of the *Maxilla inferior*,
between the *Latissimus colli* and the
Masseter.

Is Inserted into the Angle of the Lips. *Insertion*.

Its Use is to pull down the corners *Use*.
of the Mouth.

SPHINCTER LABIORUM

The fleshy Fibres of this Muscle sur- *Origin*.
round the Lips like a Ring,

Its

The Muscles of the Lips.

Use.

Its Use being to constringe and draw both Lips together.

The *proper* belong either to the upper or lower Lip, and are four pair in number, two Muscles on each side to each Lip.

ELEVATOR LABII INFERIORIS PROPRIUS, *Cowperi.*

Origin.

Arises from the lower Jaw, near the Gums of the *Dentes incisivi*.

Insertion.

Is Inserted into the Skin of the Chin,

Use.

Which it draws upwards, together with the lower Lip.

ELEVATOR LABII SUPERIORIS PROPRIUS

Origin.

Arises broad and fleshy from all that Portion of the *Os maxillare* that makes the lower part of the Orbit, immediately above the hole that transmits the Nerves and Arteries to the Cheeks, and admits their returning Veins, being joined on each side by a narrow fleshy slip, the shortest coming from the *Os mali*, near the Origin of the *Zygomaticus*; the longest proceeding from all the upper Process of the first named Bone, where it joins the *Os frontis* at the great *Canthus* of the

The Muscles of the Lips.

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the Eye, and descends by the edge of the *Ductus lachrymalis*.

Is Inserted into the Upper Lip, sending some *Fibrillæ* to be spread on the *Ala narium*. *Insertion.*

Its Use is to draw that Lip outwards, and when both act in concert, to pull it upwards.

DEPRESSOR LABII INFERIORIS PROPRIUS

Arises fleshy from the inferior and anterior part of the lower Jaw, called the *Chin*. *Origin.*

Is Inserted into the under Lip near its *Sphincter*. *Insertion.*

Its Use is to pull the lower Lip down, and a little outwards.

DEPRESSOR LABII SUPERIORIS PROPRIUS, *Comper.*

Arises thin and fleshy from the *Os maxillare*, immediately above the Gums of the *Dentes incisivi*. *Origin.*

Is Inserted into the superior part of the upper Lip and root of the *Ala nasi*. *Insertion.*

Its Use is to draw downwards the parts in which it terminates.

The Lips of a Dog are moved by five pair of Muscles, and a Sphincter.

The

The Muscles of the Cheeks.

The Zygomaticus has a great many of its Fibres spread upon the Buccinator, whereby it's able to draw the Lips more forcibly upwards and sideways.

Elevator labii superioris arises fleshy from the lower or little Angle of the Orbit, growing broader as it descends to its large Insertion into the upper Lip, which it pulls upwards when this Animal snarls, &c.

Depressor labii inferioris comes from about the middle of the Rostrum or lower Jaw.

If you cut the Gums above the Dentes incisivi of both Lips, you'll have a fair prospect of the Elevator labii inferioris, and the Depressor labii superioris, running as in Man.

C H A P. IX.

Of the Muscles of the CHEEKS.

THE Cheek, called *Gena* and *Bucca*, has no proper Muscles of its own, being provided with two common to it, and some other parts; the first is common to it, with the Lips; the second is common to it, the lower Jaw, the

The Muscles of the Cheeks.

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the Lips, and most part of the Skin of the Face.

BUCCINATOR

Arises by two distinct beginnings on *Origin:* each side, one tendinous and fleshy from the lower Jaw, between its last *Dens molaris*, and the root of the forepart of its *Processus corone*; the other is fleshy from the upper Jaw, between its last *Dens molaris* and the *Processus pterigoides*, from whose Extremity also it arises tendinous, being continued between these two Originations to the *Pterigo-pharyngeus*; from thence proceeding with streight Fibres, and adhering to the Membrane that covers the inside of the Mouth, but without touching the Gums of either Jaw,

Is Inserted into the Angle of the Lips. *Insertion.*

Its Use is not only to move the *Use.* Cheeks with the Lips, but also to contract the Cavity of the Mouth, by bringing them inwards, and so thrust the Meat between the Teeth for its better Commination.

QUADRATUS GENÆ *vel* LATISSIMUS COLLI.

Arises broad, thin, and membranous, *Origin.* interlaced with abundance of carnous Fibres,

The Muscles of the Cheeks.

Fibres, which in their ascent do all unite, and make one continued fleshy Substance, from the *Sternum* between the first and second Rib, from the *Acromion* and between these two, from the proper or investing Membranes of the *Pectoral* and *Deltoidal* Muscles.

Insertion. Is Inserted into that space of the external *Labrum*, or Lip of the lower Jaw, that's between its Commissure and the backmost Origin of the *Depressor labiorum communis*, into the *Buccinator* near the Angle of the Mouth, and membranous into the Skin of the Face. As these two Muscles approach the Chin, they are observed to decussate one another; that is, part of the Muscle on the right side runs over the other, and is fixed to the lower Jaw on the left side, and part of the Muscle of the left side runs under the other, and is inserted into the lower Jaw on the right side.

Use.] Its Use is to draw the Cheeks and Skin of the Face downwards, and to assist the *Digastrick* in opening the Mouth.

In a Dog it's only part of the Membrana carnosæ, expanded over the Neck and the Musculus buccinator.

C H A P. X.

Of the Muscles of the External EAR.

THE Muscles of the Auricle are common or proper; the common proceed either from the middle Tendon of the *Occipito frontalis*, or from the *Quadratus Genæ*, and move this part according to their respective Insertions, whence they are divided into so many Muscles, and named by Authors from their Use, as *Attollens seu Musculus auricula anterior*, *deprimens*, &c.

The proper Muscles of the Auricle, or outer part of the Ear, are such as arise from the *Os petrosum* and *Parietale*, and are Inserted into the *Concha* under the common. Their Number is uncertain.

The Muscles subservient to the motion of a Dog's external Ear are so very numerous, as well as small, that I think it needless to insist on a particular account of each of them, a description of two of the most remarkable being sufficient.

Retrahens ad collum arises from the Union of the *Musculi cucullares*, above
C the

The Muscles of the Internal

the second or third spinal Process of the Neck, and ends in the lateral and upper part of the Concha.

Erigena arises from the bony Ridge of the Os occipitis, and terminates by three fleshy Portions into the outward Ear. Its Use being to erect or prick the Ears.

C H A P. XI.

Of the Muscles of the Internal Ear, and Auditory Passage.

THE parts of the internal Ear provided with Muscles are the two little Bones, called *Malleus* and *Stapes*; the Hammer has three, and the Stirrop one.

EXTERNUS AURIS *Aquapendent. vel*
Ful. Casser. Placent.

Origin.

Arises fleshy from a roughness in the upper side of the *Meatus auditorius* about its middle.

Insertion.

Is Inserted by a long and slender Tendon into the upper Process of the *Malleus*, that adheres to the *Membrana tympani*.

Its

Ear, and Auditory Passage.

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Its Use is to draw the Hammer with the *Membrana tympani* outwards. Use.

In a Dog it comes from the *Os petrosum*, opposite to the long Process of the Malleus.

INTERNUS AURIS *Eustach.*

Arises tendinous and fleshy from the *Origin.* beginning of the cartilaginous and extremity of the Bony part of the *Tuba Eustachiana*, and running in a long Channel, excavated in the *Processus petrosus*; it grows tendinous as it enters the Cavity of the Barrel, and passing over a little rising made by the extremity of this Pipe near the *Fenestra ovalis*,

Is Inserted into the posterior part of the handle of the *Malleus*, a little from its head. *Insertion.*

Its Use is to pull the Hammer inwards, nearer the *Os petrosum*. Use.

N. B. The Bone that some observe to be in the Tendon of this Muscle, is nothing else, in my opinion, but the extremity of the long Channel in which it runs, broke off from the *Os petrosum*, and left adhering to the Tendon.

The Muscles of the Internal

OBLIQUUS AURIS *vel* EXTERNUS *Duvern.*

Origin. Arises fleshy as the former, whence marching backwards through a Channel in the upper and external part of the *Tuba Eustachii*, without entering the Cavity of the Barrel,

Insertion. Is Inserted into the slender Process of the *Malleus* that lies upon the edge of that oblique Sinuosity that's most remarkable in the bony Circle of a *Fetus*.

Use. Its Use is to draw the Hammer forward, nearer that part of the Temple-Bone from which in part it takes its Origin. Of this Process *Cæcilius Folius* has given the best description; in length it exceeds that of the *Manubrium malleoli*, and in shape it very much resembles a small Fish-Bone.

In a Dog it may be called Musculus Glandiformis, or ovalis, because it appears like a Glandulous Lump of an Oval, or roundish Figure, which lies in a particular Cavity dug for it in the Os petrosum, near the Foramen ovale, from the bottom of which it springs, and is inserted by a very slender Tendon.

STAPIDÆUS *vel* MUSCULUS STAPEDIS, Duvern.

Arises fleshy from the bottom of a *Origin* Channel excavated in the *Os petrosum*, about the middle of the true *Fallopian Aqueduct* laterally.

Is inserted tendinous into the side *Insertion* of the head of the *Stapes*.

Its Use is to draw the *Stapes* up *Use* wards.

MUSCULUS MEATUS AUDITORII ***

Arises from one of the discontinued *Origin* Cartilages of this Passage, and

Is Inserted into another, which it *Insertion* serves to approximate and draw nearer one another. It is only observable in *Use* a large and fleshy Subject.

In a Dog there are several little Muscles which come from one of the protuberating Cartilages of the Concha, and end in another of them, which, by pulling them nearer, or drawing them farther from one another, may dilate or streighten the Porus acousticus, or auditory Tube, for the fitter reception of Sounds, as occasion may require.

C H A P. XII.

Of the Muscles of the Os HYOIDES.

THE Bone of the Tongue, called *Os hyois*, has five pair of Muscles, and one odd one, which are all common to it with the Tongue and the *Larynx*.

MYLOHYOIDÆUS, *Fallop.*

Origin. Arises fleshy and a little tendinous from all the Inside of the lower Jaw, between the backmost *Dens molaris* and the Commissure of the two Bones.

Insertion. Is Inserted into the lower edge of the Basis of the *Os hyoides*.

Use. Its Use is to pull this Bone upwards, forwards, and to either side according as its Fibres run.

GENIOHYOIDÆUS

Origin. Arises tendinous from a rough Protuberance at the inside of the Chin, or from the forepart of the lower Jaw internally.

Insertion. Is Inserted into both the edges of the Basis of the *Os hyoides*, remitting a fleshy slip to the beginning of each of its *Processus's*.

Praelectio tertia.

Its

The Muscles of the Os Hyoides.

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Its Use is to draw this Bone upwards and forwards. *Use.*

STYLOHYOIDÆUS

Arises by a round Tendon from near *Origin.* the middle of the *Processus Styloformis.*

Is Inserted tendinous into the Basis *Insertion.* of the *Os hyois* near its *Cornu*, to which also it often adheres fleshy.

N. B. The carnous Belly of this Muscle is sometimes divided on both sides for the passage of the middle Tendon of the Digastrick, sometimes but on one side only, and sometimes it is unperforated on both sides.

Its Use is to pull the Bone of the *Use.* Tongue to one side, and a little upwards when both act in concert.

STYLO CHONDROHYOIDÆUS *** *vel*

STYLO HYOIDÆUS ALTER,

Arises fleshy and tendinous from the *Origin.* *Styloide Process*, near the Origin of the *Stylo Pharyngæus*, and running under the *Cerata Glossus*,

Is Inserted into the cartilaginous Ap- *Insertion.* pendix of the *Os Hyoides*.

Its Use is to assist the former in pul- *Use.* ling this Bone upwards and laterally.

The Muscles of the Os hyoides.

CORACOHYOIDÆUS

Origin.

Arises broad, thin and fleshy from the superior *Costa scapulae*, near its *Sinus* or *Cavitas semilunaris*, as also from some part of the Ligament that runs from the edge of this Cavity to the root of the *Processus coracoides*, thence ascending obliquely it becomes tendinous between the *Mastoidæus* and *Vena jugularis interna*, but soon growing fleshy again,

Insertion.

Is Inserted by a thin Tendon into the Basis of the *Os hyois*, between the termination of the *Sternohyoides* and its *Cornu*.

Use.

Its Use is to pull this Bone obliquely downwards.

STERNOHYOIDÆUS

Origin.

Arises fleshy and thin from the Cartilaginous part of the first Rib, the upper and inner part of the *Os pectoris*, and from the adjoining inferior part of the *Clavicula*.

Insertion.

Is Inserted between the middle of the Basis of the *Os hyoides* and the *Coracohyoides*.

Use.

Its Use is to pull that Bone directly downwards.

A Dog has neither the Stylo-chondro nor the Coraco hyoidæus, but instead of these

The Muscles of the Os Hyoides.

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these it has two more, which are not to be found in the humane Body, viz.

Chondro cerato hyoidæus, which is a small fleshy Muscle that comes from all the cartilaginous Appendix of the Bone Hyois, and ends into all the shortest Process, or Cornu, that joins the Cartilago Thyreoidæa of the Larynx. Its Use being to draw them nearer one another. And

Inio cerato hyoidæus; this is a very short fleshy Muscle, which arises from the forepart of that Process of the Occiput, which gives origin to the Digastrick of the lower Jaw, and is Inserted near the extremity of the longest Process of the Os hyoides, which it pulls backwards.

The Stylohyoidæus arises from the Horn of the Os hyoides, near its adhesion to the Occiput, and running across the Digastrick Muscle, is inserted into the Basis of that Bone. It's a long and slender fleshy Muscle.

The Sternohyoidæus arises fleshy in common with the Sternothyreoidæus, from the inside of the Cartilaginous part of the first Rib next the Sternum; it parts from the aforesaid Muscle about two Inches or more above their united Origin.

C H A P. XII.

Of the Muscles of the TONGUE.

THE Tongue has four pair of Muscles, which may be called *proper*, because they are all inserted into its own Substance.

GENIOGLOSSUS

Origin.

Arises tendinous from a rough Protuberance in the inside of the forepart of the lower Jaw about the middle of the Chin. Its Fibres run in three different directions;

Insertion.

the middlemost terminates about the middle of the Tongue, the anterior is carried forwards towards its tip, and the posterior or last order runs obliquely backwards towards the root of the Tongue, and by a narrow Slip ascends on each side to the Horns of the *Os hyoides*.

Use.

Its Use is to move the Tongue according to the different direction of its Fibres, *i. e.* to pull it forwards, and thrust it out of the Mouth, to draw it into the Mouth, or to bring the tip of the Tongue downwards and backwards.

CERA-

CERATOGLOSSUS

Arises fleshy from three different *Origin.* places; Its first Origin is broad and carnous from the *Cornu* of the Bone *Hyois*; this is properly the *Cerato-glossus*; its second Head comes from part of the Basis of this Bone, and is named *Basio-glossus*; the third beginning is derived from the Cartilaginous Appendage of the *Hyoides*, which some call *Chondroglossus*; these three unite, and their Fibres running in the same direction,

Are Inserted broad and thin near the *Insertion.* root of the Tongue laterally.

Its Use is to draw the Tongue ob. *Use.* liquely to one side; but if both act at once, the Tongue is pulled directly backwards into the Mouth.

STYLOGLOSSUS

Arises tendinous and fleshy from the *Origin.* *Processus Styloformis* of the Temple-Bone, and often also from a fleshy Ligament that's extended from that Process to the Angle of the lower Jaw.

Is Inserted into the side of the *Insertion.* Tongue from its root to near its middle.

Its Use is to draw the Tongue late. *Use.*

The Muscles of the Tongue.

rally, but when both act, to pull it upwards and inwards.

In a Dog it arises from the extremity of the long Process of the Os hyoides.

LINGUALIS

Origin. Arises pretty large and fleshy from the Basis of the Tongue laterally, and runs streight forwards between the *Cerato* and *Genioglossus* to its tip, where

Insertion. it's hard to determine whether it ends there, or if it returns circularly after the same manner on the other side to the root of the Tongue again.

Use. Its Use is to contract or narrow the Substance of the Tongue, and at the same time to bring it backwards and downwards.

C H A P. XIV.

Of the Muscles of the LARYNX.

THE upper part or head of the *Aspera arteria*, called *Larynx*, is made up of five Cartilages, three of which are provided with Muscles.

The *Cartilago Thyreoidæa*, or *Scutiformis*, has three Muscles on each side.

HYOTHY-

HYOTHYREOIDÆUS

Arises fleshy from part of the *Basis*, *Origin.*
and almost all the *Cornu* of the *Os*
hyoides.

Is Inserted into the outside of a rough *Insertion.*
Line that runs between the Angles of
the *Cartilago scutiformis*.

Its Use is to pull the *Larynx* upwards. *Use.*

STERNOTHYREOIDÆUS

Arises fleshy from all the edge of *Origin.*
the first Bone of the *Sternum* internally
between the Cartilages of the first and
second Rib, from both which it receives
two small beginnings.

Is Inserted tendinous and fleshy into *Insertion.*
the surface of the above-mentioned
rough Line of the Buckler-like Carti-
lage. It very often remits a slip to
the *Cornu* or *Process* of the *Os hyois*.

Its Use is to draw the *Larynx* down. *Use.*
wards.

*In a Dog the beginning of this Mus-
cle is confounded with that of the Sterno-
hyoidæus.*

CRICOTHYREOIDÆUS

Arises fleshy from the forepart of *Origin.*
the *Cartilago Cricoides*.

Is

The Muscles of the Larynx.

Insertion. Is Inserted into the lunated and lower part of the *Thyreoides*.

Use. Its Use is to dilate the Cavity of the *Larynx*, by drawing the *Scutiformis* outwards and to one side.

Each of the *Arytenoidal* Cartilages has three proper Muscles, and two common to them both: The common are the two following.

ARYTÆNOIDÆUS MAJOR

Origin. Arises fleshy from one of these Cartilages near its juncture or articulation with the *Cricoides*, and running transversely of an equal breadth with streight Fibres,

Insertion. Is Inserted into all the same side of the other Cartilage.

Use. Its Use is to shut the *Rimula* or Chink called *Glottis*, by bringing these two Cartilages nearer one another.

ARYTÆNOIDÆUS MINOR ***

Origin. Is a very small Muscle which runs upon the surface of the former, arising from that part of one of the *Cartilagine Arytenoidææ* next the *Cricoides* on

Insertion. one side, and terminating into that part of the other *Arytenoidal* Cartilage that is farthest from the *Cricoides* on the other side. Its

Its Use is to assist the former in its Use.
action, which is much strengthened by
this manifest decussation of Fibres.

CRICOARYTENOIDÆUS POSTICUS

Arises fleshy from the back part of Origin.
the Ring-like Cartilage, and
Is Inserted into the *Guttalis* near Insertion.
the following.

Its Use is to open the *Rimula*. Use.

CRICOARYTENOIDÆUS LATERALIS

Arises fleshy from the *Cartilago cri-* Origin.
coides laterally.

Is Inserted into the *Arytenoides* or Insertion.
Guttalis, under the implantation of the
superior order of Fibres belonging to
the following Muscle.

Its Use is to open the *Glottis*. Use.

THYREOARYTENOIDÆUS

Arises from the whole length of the Origin.
internal Concave, and middle part of
the *Cartilago scutiformis*, from whence
its Fibres proceed in three different
orders; the uppermost terminates into Insertion.
the *Guttalis*, near the Insertion of the
Cricothyrenoides lateralis; the middle-
most, which may be called *Thyreog-*
lottis, runs up under this, and is
spread

The Muscles of the Larynx.

Use.

spread upon the Membrane that comes between the *Glottis* and *Arytenoidal Cartilage*; the lowermost is Inserted into the anterior Angle of this Cartilage. The superior and inferior Order of Fibres do draw the Cartilage, to which they are fixed, nearer the *Scutiformis*, and thereby do most adequately shut the *Rimula* or *Glottis*; the middlemost direction of Fibres may help to pull the *Epiglottis* down when both act, or laterally when one only is contracted.

The fifth Cartilage of the Larynx, called Epiglottis, is furnished with a pair of Muscles in a Dog, which I call Hyoglottus; it arises fleshy from the Cartilaginous Appendix of the Os hyoides internally, and partly also from its Basis hard-by the Origin of the Basio-glossus; from thence each marches obliquely nearer one another to their united tendinous Insertion, in the middle of the upper part of the Epiglottis, not far from its tip, which it serves to raise and lift up again after it has been depressed in swallowing.

C H A P. XV.

Of the Muscles of the PHARYNX.

THO' I take the upper part of the *Œsophagus*, or *Pharynx*, to be only made up of a pair of Muscles, one on each side, which I call *Pharyngæus*, whose fleshy Fibres running in different Directions from distinct and various Originals, do meet and unite upon the back of the Glandulous Membrane of the *Fauces*; Yet, in imitation of the accurate *Valsalva*, I shall describe each different Order by it self, and name it from the place whence it arises.

1. **CEPHALO-PHARYNGÆUS.** This Order of Fibres arises from a little Rising, or *Tubercle*, in that Process of the *Os Occipitis* that joins the *Sphænoïdal* Bone, not far from its great hole.

2. **CHONDRO-PHARYNGÆUS ***** This Order arises from the Cartilaginous Appendage of the *Os hyoides*.

3. **CRICO-PHARYNGÆUS Vals.** Arises from the *Cartilago Cricoides*, or *Annularis*.

4. **GLOSSO-**

The Muscles of the Pharynx.

4. GLOSSO-PHARYNGÆUS, *Valsal.*
Arises from the root or upper part of the Tongue laterally.

5. HYO-PHARYNGÆUS *Vals.* Arises from the *Cornu* or Process of the *Os hyoides*, wherefore I name it *Hyo-cerato-pharyngæus*.

6. MYLO-PHARYNGÆUS *** Arises from the lower Jaw, near the last *Dens molaris*.

7. PTERIGO-PHARYNGÆUS, *Cowp.*
Arises tendinous and fleshy from the *Pterigoid* Process of the *Os sphænoideale*.

8. SALPINGO-PHARYNGÆUS ***
Arises from the extremity of the Bony part of the *Tuba Eustachii*, commonly called the *Aqueduct*.

9. SYNDESMO-PHARYNGÆUS ***
Arises from the Ligament that ties the *Cornu* of the *Os hyoides* to the Process of the *Cartilago scutiformis*.

10. STYLO-PHARYNGÆUS Arises fleshy from near the root of the *Processus styloformis*.

11. THYREO-PHARYNGÆUS *Vals.*
This last order of Fibres arises from that rough Line that's extended between the two Angles of the *Thyreoid* Cartilage, as also from some of its upper side.

Now

Now, from these various beginnings *Origin.* does this Muscle of the *Pharynx* arise, and is Inserted into the Membrane of *Insertion.* the *Fauces*, where it meets with its fellow of the other side. As for its Use, the Fibres, that spring from the *Use.* *Larynx*, *Os hyoides*, and *Tongue*, serve to contract the Cavity of the Gullet, and forward the Aliment, &c. into the Stomach. Those, which arise from the other parts above described, do all serve to enlarge and dilate the Cavity of the Gullet, in as much as they pull it out on all sides for the Reception of the Food, &c.

In a Dog the Stylo-Pharyngæus arises from near the extremity of the long Cornu of the Os hyoides, and the Salpingo-Pharyngæus runs for some space at a distance from the Membrana faucium, different from what it does in Man.

CH A P. XVI.

Of the Muscles of the UVULA.

THE Gargareon or Uvula has four pair of Muscles.

GLOS-

*The Muscles of the Uvula.***GLOSSO-STAPHILINUS, Valsf.**

Origin. Arises fleshy from the side of the Tongue.

Insertion. Is Inserted near the middle of the Uvula laterally.

Use. Its Use is to pull it to one side, and when both act to bring it nearer the Tongue.

PALATO-STAPHILINUS ***

Origin. Arises fleshy from the middle of the *Os palati*, near its juncture with its fellow of the other side, and running streight forward,

Insertion. Is Inserted near the extremity of this duplicated glandulous Membrane, called the *Gargareon*.

Use. Its Use is to pull it forwards and downwards, which Office was always said to be performed by the *Pterigo-staphilin* *internus*, till *Valsalva* appear'd, who corrected that Mistake, and ascribed the Muscle so called to the Tube of the Ear, as shall be shewn hereafter.

SALPINGO-STAPHILINUS, Valsf. PTERI-STAPHILINUS EXTERNUS. VULGO

Origin. Arises fleshy from the Bony part of the Tube of the Ear, and Is

The Muscles of the Uvula.

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Is Inserted into the Basis of the U- *Insertion.*
uvula, where it joins Fibres with its
partner Muscle on the other side.

Its Use is to draw the *Uvula* up- *Use.*
wards and backwards,

THYREO-STAPHILINUS ***30

Arises fleshy from the edge of the *Origin.*
upper part of the *Cartilago Thyreoides*,
between the *Thyreopharyngeus* and the
Membrana faucium, from thence it
ascends streight upwards, being much
dilated as it approaches the *Uvula*, up-
on the upper side of which it is spread
very broad. And here it is not easie to *Insertion.*
determine, even when the Membrane
that covers it is removed, whether it
unites with its Partner, or if its Fibres
surround the *Gargareon*, and then de-
scend to the upper part of the *Cartilago*
scutiformis on the other side.

In Deglutition, when this pair *Use.*
of Muscles act, the *Foramina narium*
are in a great measure shut to hinder
the passing of any thing through the
Nose that is taken in at the Mouth.

*In a Dog between the Tonsils are
placed two spongy Bodies, like Teats,
at a little distance from one another,
formed*

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formed of a production or folding of the glandulous Membrane that lines the Mouth, and in all respects seem analogous to that part in Man; each of them is provided with two Muscles; one to pull them down, which arises and is inserted like the *Glossostaphilinus* in Man; the other draws them upwards from the Passage into the Nose. It arises, proceeds and is inserted like my *Palatostaphilinus*, being a very long and slender Muscle.

C H A P. XVII.

Of the Muscles of the TUBA EUSTACHIANA.

THE Canal of Communication between the Mouth and Barrel of the Ear, *Aquæductus Fallopii vulgo*, is by that accurate Anatomist *Antonius Valsalva*, called *Tuba*, from its Figure, and *Eustachiana*, from its first Discoverer *Bartholomæus Eustachius*; for to dilate and keep it open, he describes a new Muscle, for he first found out that the Muscle called *Pterigo staphilinus internus* and *Sphæno pterigo palatinus* does

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does not belong to the *Uvula*, but unto this Passage.

MUSCULUS TUBÆ NOVUS *Valsal.* vel
PALATO SALPINGÆUS ***

In my late Enquiries into the Muscular Structure of the *Fauces*, I have always observed that this Muscle

Arises broad and tendinous from the *Origin.* edge of all the lunated part of the *Os palati*, several of its Fibres being spread upon the Membrane that covers the *Foramen narium*, then growing into a small thin Tendon, it's reflected about the Hook-like Process of the inner *Ala* of the *Processus pterigoides*, but soon turning into a narrow and thin fleshy Belly, it runs close along the inside of the *Musculus pterigoidæus internus*, and

Is Inserted carnosus into all the mem. *Insertion.* branous, fleshy and cartilaginous part of the Tube.

Its Use is to dilate and keep open *Use.* this Channel, as *Valsalva* first has most ingeniously took notice.

Long before the excellent Treatise of this Author fell into my hands I demonstrated a Muscle something analogous to this in a Dog, which I name
with

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with respect to its Origin, Progress and
Termination,

**TYMPANO - PETROSO - SALPINGO -
PTERIGO-PALATINUS,**

Arises from the Os petrosum within the Cavity of the Tympanum, or Barrel opposite to the Musculus ovalis, and going out by the side of the Ductus a palato ad aurem, to the membranous and fleshy part of which it firmly adheres; becomes carnous, and continues so till it arrives at the sharp Wing-like Process of the Os sphœnoidale, where it grows tendinous; and being reflected over the same, its Fibres are again dilated and expanded over the Membrane that covers the Slits, or Foramina narium, where it seems to join with its fellow on the other side.

The Use of this Muscle is to compress the palatine Glands that lie above it in great clusters and heaps, by pulling up the Membrane, which is a very useful Contrivance to forward the Secretion of their salival Juices, that are of so great use in time of Mastication for softening the hard Bones, and such like Substances as this Animal usually feeds upon, and farther for promoting

The Muscles of the Head.

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mote their Dissolution in the Stomach; besides, it may also be subservient to the dilatation of the Eustachian Tube.

C H A P. XVIII.

Of the Muscles of the Head, appearing or situate in the fore and lateral parts of the Neck.

THE Head has twelve Muscles on each side; five offer themselves to be described in this Position of the Body; the rest appearing when the Subject lies prone.

MASTOIDÆUS

Arises tendinous, and sometimes a little fleshy, from the upper part of the *Os pectoris*, and carnosus from near one half of the *Clavicula* next it.

Is Inserted by a thick and strong Tendon into the point or forepart of the *Processus Mastoidæus*, and by a broad and thin tendinous Expansion running obliquely upwards and backwards into the rest of that Process, and the adjacent part of the *Os petrosam* externally,

The Muscles of the Head.

Use.

nally, hard by the *Lambdoidal Suture*. When this acts, the Head is turned to the opposite side, and when both act together they bend the Head forwards.

In a Dog it arises by an acute tendineo-carnous beginning from the upper part of the Os Pectoris, and growing into a thick and fleshy Belly continues united with its fellow half way up the Trachæa; then receding from one another, each marches obliquely to its double Termination, one by a round Tendon into the edge of a Cavity made behind the bony part of the Meatus Auditorius, the other by a broad thin and membranous Tendon into the lateral part of the Os Occipitis.

RECTUS INTERNUS MAJOR

Origin.

Arises from the anterior points of the transverse Processes of the third, fourth, fifth and sixth *Vertebra* of the Neck, by so many double Tendons, which soon become fleshy.

Insertion.

Is Inserted into the anterior Process of the *Os occipitis*, near its conjunction with the *Os sphænoides*.

Use.

Its Use is to bend the Head forwards.

In a Dog it arises tendineo-carnous from the fore and internal part of all the

The Muscles of the Head.

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the transverse Processes of the Neck, except that of the first, on the inside of which it is reflected in its ascent to the head, where it terminates in a little dimple made in the Occipital Bone.

RECTUS INTERNUS MINOR *Comp.*

Arises fleshy from the forepart of Origin. the Body of the first *Vertebra colli*.

Is Inserted near the root of the *Condiloide* Process of the *Occiput* under the former.

Its Use is to nod the Head forwards. *Use.*

RECTUS LATERALIS *Fallop.*

Arises fleshy from the transverse Pro- Origin. cess of the first *Vertebra colli*.

Is Inserted partly into the *Os occipitis*, *Insertion.* and partly into the *Os temporis*, near the *Processus mammilaris*.

Its Use is to nod or bend the Head *Use.* a little to one side.

MUSCULUS CAPUT CONCUTIENS

Arises fleshy from the oblique Pro- Origin. cess of the second and third *Vertebra colli*, and ascending obliquely backwards,

Is Inserted near the root of the trans- *Insertion.* verse Process of the first *Vertebra*.

The Muscles of the Neck.

Its Use is to shake the Head ; for the first *Vertebra* being thereby pulled to one side, the Head must of necessity obey that motion by virtue of its Articulation with the same.

In a Dog it is yet much more conspicuous, arising by two fleshy heads from the forepart of the oblique Process of the second *Vertebra colli*, and by one from the third, which uniting ascend obliquely, and terminate into the transverse Process of the first, between the *Levator scapulae major* and the *Obliquus inferior*.

C H A P. XIX.

Of the Muscles of the NECK, that lie on its forepart.

THE Neck or *Collum* has six Muscles on each side, which I distinguish into *common* and *proper* : The *proper* are such whose Use is confined to the *Vertebra's* of the Neck only, as the *Interspinales*, the *Intertransversales*, and the *Intervertebrales* ; the *common* are equally subservient to the motions of the Neck and Head. Of all these there's only one pair that appears in this posture of the Body. LON.

LONGUS

Arises tendineo-carnous from the *Origins*. Bodies of the four or five superior *Vertebrae* of the *Thorax* laterally.

Is Inserted into the forepart of the *Insertions*. four lowermost *Vertebrae* of the Neck by so many small Tendons cover'd over with Flesh, into the third *Vertebra* by a small Tendon, into the second by a very long and broad one, and into the first by one that is rounder, but not so large, being fleshy on both sides; it is also fasten'd to some of the transverse Processes of the Neck near their Roots by small Tendons.

Its Use is to bend the Neck to one *Use*. side, but if both act to bring it directly forwards.

In a Dog it appears as it were divided into as many distinct Muscles by tendinous Lines as there are Vertebrae in the Neck.

N. B. The *Scaleni* belong to the *Thorax*.

C H A P. XX.

Of the Muscles of the lower Jaw.

THE *Maxilla inferior* has five pair of proper Muscles, and one pair common to it, with the Cheeks, &c. viz. The *Quadratus Genæ*, called by Galen *Platusma myoides*, already described.

TEMPORALIS

Origin. Arises fleshy from the anterior and lower part of the Parietal Bone laterally, from all the *Pars squamosa* of the Temple Bone, from a little rising in the lateral part of the *Os frontis*, and from the external part of its Process, from part of the *Os mali* internally adjoining to it, and from the upper part of the lateral Process of the *Sphenoidal* Bone; from these distant Origins its fleshy Fibres tend towards the *Os jugale*, under which they pass.

Insertion. Is Inserted tendinous into the upper part of the *Processus corone*, in the duplicature of which Tendon this *Processus* is inclosed as in a Sheath, being continued down all its forepart to near the last *Dens molaris*, and tendinous
and

The Muscles of the lower Jaw.

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and fleshy into the posterior part of this Process, as far back as its Neck.

Its Use is to pull the lower Jaw up-wards.

In a Dog it is a very thick and strong Muscle, to the bulk of which the bigness of its Head is much owing. It arises fleshy from the knob of the Occiput, the Ridge or Eminence between the two Parietal Bones, and some part of the Os frontis, adhering to the Cartilaginous Ligament that fences the upper part of the Orbit, the Bone being here discontinued.

N. B. I have several Observations relating to the Structure of the Temporal or Crotaphite Muscles, which I design to communicate with many more on a proper occasion.

MASSETER

Arises by three tendinous and fleshy Origins. Heads, which run in different directions. The first comes from the Os maxillare, where it joins the Os mali, and from all the edge of the last named Bone, which makes the Ball of the Cheek. The second

Springs from the Process of that Bone, and the anterior part of the Apophysis of the Os squamosum; the Fibres of

The Muscles of the lower Jaw.

these two beginnings intersect one another. The third head

Descends from the remaining part of that Process of the Temple Bone. The first two Heads are

Insertion. Inserted into the inferior and external part of the lower Jaw, from the Angle to near its middle. The last Head runs down streight, and terminates mid-way between the Angle and Roots of the two Processes of the lower Jaw externally.

Use. Its Use is to pull the Jaw upwards, and by reason of the above-mentioned Decussation, to move it backwards and forwards, for the better chewing and grinding of the Meat.

In a Dog it arises from most part of the Os jugale, and by a strong Tendon from a Protuberance in the Maxilla superior, a little above the last Dens molaris save one. Is Inserted into a sharp Process on the Angle of the lower Jaw below the Condyle.

DIGASTRICUS

Origin. Arises tendineo-carnous from the sides of a considerable *Sulcus* excavated near the root of the *Mastoidal* Process internally; its middle Tendon sometimes

The Muscles of the lower Jaw.

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times passes through the *Stylo-hyoidæus*, but always through a Ligament that comes from the *Os hyoides*, to which Bone it is also fasten'd by tendinous Fibres.

Is Inserted tendinous and fleshy into *Insertion.* the edge of the lower Jaw, near its *Commisſure*, above the *Mylo hyoidæus*.

Its Use is to pull the lower Jaw *Use.* downwards, being assisted by the *Latissimus colli* when both act; but when one only is contracted, the *Maxilla* is moved outwardly to one side.

In a Dog it has but one Belly, which is very thick and large, arising fleshy interspersed with tendinous Fibres from an acute bony Process between the *Processus mammillaris* and the Condyle of the Occiput; and terminates about the middle of the *Maxilla* by a large *Insertion.*

PTERIGOIDÆUS INTERNUS

Arises by tendinous and fleshy Fibres *Origin.* from the inner and upper part of the largest Wing of the *Pterigoidal* Process, possessing all that space or Cavity between the two Wings; besides, it has a second Origin from that part of the *Os palati* that's engaged between these two *Alæ*.

The Muscles of the lower Jaw.

Insertion. Is Inserted into the inferior part of the lower Jaw, near its Angle internally.

Use. Its Use is to draw the Jaw to one side, but if both act in concert, they must assist the temporal Muscle in drawing it up.

PTERIGOIDEUS EXTERNUS Fall.

Origin. Arises by two distinct Beginnings, one tendineo-carnous from the edge of the external or broadest Wing of the *Processus Pterigoides*, and from part of the *Os maxillare* adjoining to it. The other is fleshy from two or three Asperities in the lateral Process of the *Os sphenoidale*, near the slit that transmits the Blood-Vessels, &c. to the Eye; as also from part of the *Os squamosum* near the Cavity that receives the Condyle of the Jaw.

Insertion. Is Inserted into a Cavity in the Neck of the *Processus Condylodes* internally, some of its Fibres running up upon the Membrane that fastens the moving Cartilage to the said Bone.

Use. Its Use is to pull the lower Jaw forwards, and thrust the Teeth out beyond those of the upper Jaw.

Because in a Dog these two Pterigoid Muscles do both arise from the same side

side of the Processus aliformis, I choose to call the first Major, and the second or last described Minor, with respect to their different bigness.

C H A P. XXI.

*Of the Muscles of the THORAX,
that appear on its forepart, the
Body lying supine.*

R Espiration consists in the alternate Dilatation and Contraction of the Cavity of the *Thorax* or Chest, which two necessary Motions are chiefly performed by thifteen pair of Muscles, of which some dilate and widen the *Thorax*, by pulling the Ribs upwards and outwards in Inspiration for the reception of the Air into the Lungs, others contract and narrow its capacity by pulling them downwards for the expulsion of the Air from the Lungs; and again, some assist in both these Actions, as the *Diaphragm* does.

The Muscles of the Thorax.

SCALENUS,

Origin.

This may be divided into four distinct Muscles. The first, or that next the Gullet, arises tendinous from the fourth, fifth and sixth transverse Process of the Neck, and

Insertion.

Is Inserted tendineo-carnous into the upper side of the first Rib, near its Cartilage.

Origin.

The second Arises from the second, third, fourth, fifth and sixth transverse Process of the Neck by so many Tendons, and

Insertion.

Terminates into the first Rib, some part of it being expanded over the fourth *Scalenus*.

Origin.]

The third Arises from the fifth and sixth transverse Process of the Neck, and

Insertion.

Is Inserted into the upper edge of the second Rib.

Origin.

The fourth Comes from the sixth and seventh transverse Process of the Neck.

Insertion.

Is Inserted into the first Rib, near its Articulation with the *Vertebra*.

Use.

They all assist in the elevation of the Ribs, and widening of the Chest.

These Muscles in a Dog differ from the Human in their Number and Insertions; for there's but three of them, and the Insertion of the first or innermost

most is into the first Rib; that of the second or middlemost, which is broad, fleshy and thin, is into the fifth or sixth Rib, counting from above downwards.

N. B. What Galen, Vesalius and others reckon'd as the upper part or insertion of the *Rectus Abdominis* in Apes, Monkeys, Dogs, &c. I have discovered to be a very distinct Muscle, which arises fleshy from the first Rib, and turning tendinous, is inserted into the *Oss. pectoris*, under the Tendon of the *Rectus*, the Fibres of which are observed to intersect one another. I call it, *Musculus in summo Thorace situs*.

SUBCLAVIUS

Arises tendinous from the *Clavicula* Origin. just by its Connexion with the upper part of the *Processus coracoides scapulae*, between two Ligaments extended from that Process to the Clavicle; it soon becomes fleshy, and adheres to all the inferior part of that Bone, near the extremity of which it runs off obliquely, and growing tendinous,

Is Inserted into the superior part of the first Rib, near the Ligament that connects the Clavicle to the same. *Insertion.*

Its

The Muscles of the Thorax.

Use. Its Use is to pull the first Rib upwards.

This is wanting in a Dog.

INTERCOSTALES

Origin. Arise from the lower edge of each superior Rib, and

Insertion. Terminate in the upper edge of each inferior Rib; that is, the *Externi* run obliquely from the backpart forward, and the *Interni* from the forepart backwards, their Fibres intersecting one another, not unlike the two strokes of the Letter X.

Use. Use, They both serve to dilate the Capacity of the *Thorax*.

TRIANGULARIS

Origin. Arises fleshy and a little tendinous from all the length of the *Cartilago ensiformis* laterally, and from the edge of the lower part of the *Os pectoris*, from whence its Fibres ascend obliquely upwards and outwards.

Insertion. Is Inserted into the Cartilaginous Endings of the fifth, fourth and third true Ribs near their Conjunction with the Bones.

Use. Its Use is to contract the Cavity of the *Thorax*, by depressing the Cartilaginous part of these Ribs. *In*

In a Dog this pair of Muscles is much larger than in Man; and it is not improbable, that in this Animal the discharge of part of the superfluous Serum of the Blood (carried off in Man by the excretory Ducts of the miliary cutaneous Glands, which a Dog is destitute of) by halitus, or by a more plentiful Secretion in their salival Glands, may be much promoted by the joint Action of these Muscles; for we may observe, after a great fatigue, or any accelerated motion of the Blood, while this Creature lies or runs with its Tongue lolling out; and breaths prodigious fast, there's a great deal of Saliva separated.

DIAPHRAGMA

Is made up of two Muscles. The Superior

Arises by two fleshy beginnings from *Origin.* the extremity of the *Cartilago ensiformis* laterally, from part of the Cartilages of the seventh Rib, and from the lower edge of the cartilaginous Endings of all the inferior Ribs, and the bony part of the last. The Inferior Muscle

Arises by two long Tendons from *Origin.* the middle of the forepart of the third
Vertebra

The Muscles of the Thorax.

Vertebra lumborum, as also fleshy from the body of the first *Vertebra* laterally, and from the transverse Process of the same; both these join in a middle Tendon. The *Midriff* is perforated in its tendinous part by the ascending *Vena Cava*, and in the fleshy part of the superior Muscle by the descending *Gula*, and *Par vagum*. Between its two tendinous Productions, as they call them, the great Artery descends, and the *Ductus Thoracicus* ascends from the *Receptaculum Chyli*. Between these Tendons on each side, and the body of the first *Vertebra lumborum* laterally, there is a Fissure through which the *Intercostal Nerves* descend, and the *Vena azygos* proceeding from the *Cava* below the *Emulgent*, ascends on the right side. Between its adhesion to the side of this *Vertebra* and its transverse Process, it makes as it were an Arch with a tendinous border, under which the upper part of the *Psoas* comes from the last *Vertebra dorsi*, and the Tendon of the *Quadratus lumborum* passes that way to its termination there.

Use.

Use, In Inspiration its superior surface is relaxed, and becomes more plain, whereby the Cavity of the *Thorax* is enlarged

enlarged to give more liberty to the Lungs to receive the Air, and the *Viscera* of the *Abdomen* are compress'd for the distribution of the *Chyle*, &c. In Expiration its surface is convex towards the *Thorax*, whereby its Cavity is lessened, and the Air expelled out of the Lungs.

In a Dog the inferior Muscle of the Diaphragm arises by four Tendons, two short and two long.

COSTARUM DEPRESSORES PROPRII

Cowperi

Arise tendinous from the upper part *Origin.* of the Rib near its juncture with the transverse Process of the *Vertebra*, but soon spreading into a broad and thin *Insertion.* fleshy Belly, they march obliquely upwards under the *Pleura* over one Rib, and terminate into that next above it, in number they are ten, being expanded all over the inside of the Ribs from the back to near their middle.

Their Use is to depress the Ribs. *Use.* Mr. *Cowper* discover'd these Muscles sometime ago, and having favour'd me with his Observation, I have nam'd them, as above, from their Use.

C H A P. XXII.

Of the Muscles of the BLADDER
of URINE.

THE *Vesica Urinaria* has two Muscles.

SPHINCTER

Is only a few small orbicular fleshy Fibres, placed under the external Coat of the Bladder, round its Neck.

DETRUSOR URINÆ,

This Muscle is only the second Coat of the Bladder, composed of Muscular Fibres, which run in different Directions, upon the Contraction of which the Neck of the Bladder opens, and the Urine is forcibly squeezed out.

C H A P. XXIII.

Of the Muscles of the ANUS.

THE Extremity of the *Intestinum Rectum*, called *Anus* and *Podex*, is provided with five Muscles, two pair called

Præledio quarta.

called *Levatores*, and a single one, which is its *Sphincter*.

LEVATOR MAGNUS seu INTERNUS

Arises fleshy from the *Os Pubis*, near *Origin*. the lower part of its Commissure internally, from thence it ascends obliquely to the *Os Ilium*, from which its Origination is continued as far back as the *Os Sacrum*, and tendinous and fleshy from the sharp Process of the *Ischium*. From this large beginning its Fibres contract as it descends over the *Marsupialis*, having its surface, which respects the Cavity of the *Abdomen*, all covered with a tendinous Membrane, and uniting with its fellow on the back of the *Intestinum Rectum*, which they cover on all sides, except where the *Prostates* and Bulb of the *Urethra* adhere to it.

Is Inserted into the *Sphincter*, its *Insertion*. upper part being firmly annexed to the *Os Coccygis*.

Its Use is to draw the *Anus* upwards after the Evacuation of the Excrements, and in some measure to shut it also; at other times it keeps this Gut from falling too low, which always happens in a Relaxation of its Fibres in a Palsie.

In

The Muscles of the Bladder.

In a Dog, before it terminates, it appears divided into three or four Portions, one of which on each side leaves the Rectum, and is Inserted into the Cauda, which it depresses after the Animal has thrust out its Excrements.

LEVATOR PARVUS seu EXTERNUS, Riol.

- Origin.* Arises tendinous and fleshy from the Protuberance or Knob of the *Ischium*,
Insertion. from whence it runs transversely to its Termination into the *Sphincter Ani*, near the Bulb of the *Urethra*.
Use. Its Use is to assist the former.
This is wanting in a Dog.

SPHINCTER,

- Insertion.* The fleshy Fibres of this Muscle encompass the lower end of the *Intestinum Rectum*, to the breadth of about an Inch, being forwards connected to the *Accelerator Urinae*, and backwards to the *Levator major*.
Use. Its Use is to hinder the Involuntary Excretion of the *Faeces*, by shutting up or closing the Passage of the *Rectum*.
In a Dog its circular Fibres do not embrace the Extremity of the Rectum so high as in Man, and the Reason of it

The Muscles of the Scapula.

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is plain, because the pressure and weight of the *Facies Alvinæ* is not so great on this part in a Dog, the Position of its Body being prone, or horizontal, as it must be in Man, whose posture is erect.

C H A P. XXIV.

Of the Muscles of the SCAPULA.

THE Shoulder-Blade is moved by three pair of proper Muscles, and two pair common to it with the Thorax, viz. the *Serratus major Anticus*, and *Serratus minor Anticus*.

TRAPEZIUS seu CUCULLARIS

Arises by a thick and short Tendon *Origin.* from the lower part of a Protuberance in the *Occipital* Bone backwards, and from the rough Line that's extended from thence towards the *Processus Mammillaris* by a thin membranous Tendon, which covers some part of the *Complexus* and *Splenius*; besides, it arises tendinous from the *Spine* of the last *Vertebra* of the Neck, and from all the *Spines* of the Back, except the two lowermost. Is

The Muscles of the Scapula.

Insertion. Is Inserted fleshy into the broad and posterior part of the *Clavicula*, *tendineo-carnous* into one half of the *Acromion*, and into almost ail the *Spine* of the *Scapula*.

Use. Use; according to the three directions of its Fibres it moves the *Scapula* variously, for its streight ones draw it directly backward, its obliquely descending pull it obliquely upward, and its obliquely ascending bring it obliquely downwards and backwards.

In a Dog its superior Origin comes from all the Ligamentum colli that's below the Rise of the Levator humeri proprius; that part of it which resembles the Cuculla springs from about the middle of the Vertebrae of the Back; that Series of Fibres which pulls the Scapula directly backwards unites with the upper triangular part of this Muscle by a thin Tendon.

The Clavicle being wanting in a Dog, it has no Insertion there.

ELEVATOR seu MUSCULUS PATIENTIAE

Origin. Arises fleshy from the first, second, third, and sometimes fourth transverse Processes of the *Vertebrae colli* by so many

The Muscles of the Scapula.

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many distinct Slips, which soon afterwards do all unite.

Is Inserted fleshy into that part of *Insertion.* the *Basis Scapulae* that's between its Spine and superior Angle.

Its Use is to pull the *Scapula* up- *Use.* wards and a little forwards.

The Elevation of this part in a Dog is performed by two Muscles, viz.

Levator major vel Anterior, Arises fleshy from the broad transverse Process of the first Vertebra colli. Is Inserted in the upper part of the Spina Scapulae, near its Extremity, which makes the Acromion in Man.

Levator Scapulae minor vel Posterior, Arises tendinous from the Occiput, near its ridge, and descending close by the long portion of the Rhomboides, is Inserted by a small Tendon into the Basis of that Bone, near its upper Angle.

RHOMBOIDES,

This Muscle I find always divided into two distinct fleshy Portions, joined by an intervening Membrane. The uppermost, which is the least, Arises *Origin.* tendinous from the last Spinal Process of the Neck, and some part of the Ligamentum colli next above it; the Inferior

*The Muscles of the Thorax.**Insertion.*

Inferior part of this Muscle arises tendinous from the *Spines* of the four or five superior *Vertebrae dorsi*. The upper part terminates into the Basis of the *Scapula*, partly above, but chiefly below its *Spine*; and the inferior part is inserted into almost all the remaining part of the Basis.

Use.

Use is to draw the *Scapula* obliquely upwards, and directly backwards.

In a Dog it arises fleshy from all the *Ligamentum colli*, which growing broader as it descends, unites with that Portion coming from the *Spines* of the Back, near the upper Angle of the *Scapula*.

C H A P. XXV.

Of the Muscles of the THORAX, that appear in Dissection, the Body lying prone.

IN the Description of the *Musculi Thoracis*, which appear on its forepart, I forgot to premise their division into Proper and Common. The Use of the first is confined only to the Chest,

Chest, but the latter are subservient to other parts, as well as it. Thus the *Serrati Antici* contribute to the motions of the *Scapula*, the *Sacro-lumbi* to the Extension of the Back, and the *Scaleni* move the Neck towards the Shoulder or first Rib.

SERRATUS MAJOR ANTICUS

Arises fleshy from the whole Basis *Origin.* of the *Scapula* internally, between the Insertion of the *Rhomboides*, and the Origin of the *Subscapularis*, being folded as it were about the two Angles of the *Scapula*.

Is Inserted into the eight superior Ribs *Insertion.* by an equal number of fleshy *Digituli*.

Its Use is to dilate the *Thorax*, by *Use.* pulling up the Ribs, and according to some, to move the *Scapula*, into which (they alledge) it is inserted, forwards and downwards.

In a Dog it arises fleshy from the five inferior transverse Processes of the *Vertebrae colli* by so many different Heads, and tendineo-carnous from the seven superior Ribs. The first, or uppermost Order of its Fibres, run obliquely downwards to their Insertion into part of the Basis *Scapulae* internally. The second Order that comes from the Ribs ascend obliquely, and are

The Muscles of the Thorax.

implanted not only into the Basis Scapulae, but also broad and fleshy into part of its Concave side. Its Use in this Animal is peculiar to the Scapula, which it moves according to the various direction of its Fibres; and besides, it keeps the Shoulder-Blade from starting out, or rising up too high, when this Animal stands or runs.

SERRATUS MINOR ANTICUS

Origin. Arises tendinous from the *Processus Coracoïdes Scapulae*, but soon grows fleshy and broad.

Insertion. Is Inserted tendineo-carnous into the lower edge of the bony part of the third, fourth and fifth Rib.

Use. Its Use is either to assist the former, or to draw the *Scapula* forwards.

This is wanting in a Dog.

SERRATUS SUPERIOR POSTICUS

Origin. Arises by a broad and thin Tendon, from the lower part of the *Ligamentum Colli*, or rather from the tendinous Union of the *Splenii*, from the acute Process of the last *Vertebra* of the Neck, and from two or three of the uppermost of the Back.

Insertion. Is Inserted into the second, third and fourth Ribs by as many particular fleshy Slips.

Its

The Muscles of the Thorax.

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Its Use is to expand the *Thorax* in Use.
the Elevation of the Ribs.

SERRATUS INFERIOR POSTICUS

Arises by a broad thin Tendon from *Origin*
the Spinal Processes of the two inferior
Vertebrae of the Back, and from as many
or more of the superior of the Loins.

Is Inserted fleshy into the lower edge *Insertion.*
of the three or four inferior Ribs, tho'
seldom into the last, but at a greater
distance from the *Obliquus Abdominis*
externus, than will admit of any In-
dentation between those two Muscles.

Its Use is to depress so many of the *Use.*
Ribs, or at least to accelerate their mo-
tion downwards.

In a Dog the Serratus superior posticus arises by a thin Tendon from the lower part of the Ligamentum Colli, its last acute Process, and from the eight superior Processes of the Back. Its Insertion is into the nine uppermost Ribs, excepting the first, by so many distinct fleshy Digituli. Its Tendon joins in with that of the Serratus inferior posticus, and so makes as it were a strong tendinous Bandage, which keeping the subjacent Muscles very close together, does vastly strengthen them in their Actions.

The Muscles of the Thorax.

SACRO-LUMBALIS

Origin.

Arises outwardly tendinous, and inwardly fleshy, in common with the *Longissimus dorsi*, from the single uppermost *Spines* of the *Os Sacrum*, from the posterior part of the *Spine* of the *Ilium*, from the inferior *Spines* of the *Vertebrae lumborum*, and by small Tendons from near the Roots of their transverse Processes.

Insertion.

Is Inserted by as many long and thin Tendons as there are Ribs, each of which terminates into the third Rib, where it begins to be curved, above its parting from the Body of the Muscle, only its uppermost and last Tendon ends in the transverse Process of the seventh *Vertebra colli*.

Use.

Its Use is to pull the Ribs down.

N. B. From the upper part of the six or seven lower Ribs arise so many small Bundles of thin tendinous and fleshy Fibres, which, after a very short progress, terminate in the inner side of this Muscle. *Steno* calls them *Musculi ad Sacrolumbum accessorii*.

CERVICALIS DESCENDENS *Diemerbr.*

Origin.

Arises fleshy from the third, fourth, fifth and sixth transverse Process of the *Vertebrae colli*, and

Is

The Muscles of the Thorax.

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Is Inserted into the third, fourth, *Insertions.*
fifth, sixth and seventh Rib, between
the *Sacrolumbalis* and the *Longissimus*
dorsi.

Its Use is to draw the Ribs upwards *Use.*
in the Act of Inspiration.

COSTARUM LEVATORES Stenon.

Which I name *Levatores proprii*, to
distinguish them from the other Mus-
cles that perform the same office:
They

Arise tendinous and fleshy from the *Origins.*
transverse Processes of the *Vertebrae*
of the Back, whence being carry'd ob-
liquely forwards, they soon terminate *Insertions.*
in the upper side of all the Ribs, ex-
cept the first.

Their Use is to lift up the Ribs, and *Use.*
dilate the Chest, which they do most
effectually, because the Processes of
the *Vertebrae* serve as a *fulcimen* to
their Motion.

C H A P. XXVI.

Of the Muscles of the HEAD, that appear in the prone Position of the Body.

SPLENIUS

Origin.

A Rises by a great many long and thin Tendons from the five superior Spinal Processes of the *Vertebra* of the Back, tendinous and fleshy from the last of the Neck, and entirely tendinous from the *Ligamentum colli*; or rather the Tendons of the two *Splenii* unite here inseparably, only about the second *Vertebra* of the Neck they recede from one another, so that part of the subjacent Muscle may be seen.

Insertion.

Is Inserted by one Tendon into the transverse Process of the second *Vertebra colli*; and by two, for the most part, into that of the first; and tendineo-carnous into the under and fore-part of the *Processus mammillaris*, from whence it's carried backwards on the *Occiput*.

Use.

Its Use is to bring the Head backwards laterally; but when both act, to pull the Head directly backwards.

In

In a Dog it terminates in the transverse Process of the first Vertebra colli, and into the posterior and lateral part of the Occipital Bone. Backwards it's intimately conjoined with its fellow of the other side, from the sharp Process of the last Vertebra colli to the Occiput, from which commissure or joining there runs down a thin transparent Membrane to all the Ligamentum colli.

TRACHELO MASTOIDEUS seu CAPITIS PAR TERTIUM Fallop.

Arises from the transverse Process of the first and second Vertebrae dorsæ, and from the three or four lowermost of the Neck, by so many thin Tendons, which uniting form a pretty thick fleshy Belly, that runs up under the Splenius, and

Is Inserted into the middle of the backside of the Processus mastoideus by a thin Tendon.

Its Use is to assist the Complexus. Use.

N. B. This Muscle often receives a roundish fleshy slip from the Longissimus dorsæ.

In a Dog it's inseparably united with the Tendon of the Splenius, at its termination in the Occiput.

The Muscles of the Head.

COMPLEXUS

Origin.

Arises tendinous and fleshy from the six or seven superior transverse Processes of the *Vertebrae* of the Back, and from all those of the Neck, except that of the first, by so many distinct Beginnings; in its ascent it adheres to the Spinal Process of the last *Vertebra colli*, and to the Ligament that runs from thence to the second *Vertebra*, where it leaves its fellow of the other side, and runs off obliquely forwards to its termination.

Insertion.

Is Inserted fleshy into the *Os Occipitis*, between the upper part of the *Obliquus superior*, and the edge of the Protuberance, observable in the middle of that Bone.

Use.

If one Muscle acts, the Head is thereby pulled a little to one side; but if both act in concert, the Head is extended, or drawn directly backwards.

In a Dog it arises from the four superior transverse Processes of the Back by so many thin and small Tendons, as also from the five lower ones of the Neck by so many different Heads, not unlike the *Digituli* of the great serrated Muscle, which uniting form a large fleshy Belly, that terminates tendinous
in

The Muscles of the Head.

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in the lateral part of the Occiput,
near its Ridge.

RECTUS MAJOR

Arises fleshy from one of the double *Origin*.
Spines of the second *Vertebra* of the
Neck, and grows broader in its
ascent, which is not streight, but ob-
liquely outwards, being as it were
divided into two thin Portions, the
Innermost of which

Is Inserted into the *Occiput*, near the *Insertion*.
Rectus lateralis; the other, which is
the broadest, ends in the same Bone
under part of the *Obliquus major*, ten-
dinous and fleshy.

Its Use is to extend, or pull the *Use*.
Head backwards.

This in a Dog is double; the first, or
Rectus major, comes from the lower
part of this *Spinal Process*; the second,
which I call Rectus medius, proceeds
from the upper part of the same *Spine*.

RECTUS MINOR

Arises narrow from a little Protube- *Origin*.
rance in the middle of the backpart of
the first *Vertebra colli*, close by its
fellow, and

Is Inserted pretty broad (its inner *Insertion*.
E 5 edge

The Muscles of the Head.

edge being only cover'd by the *Rectus major*) into the sides of a dimple in the *Os occipitis*, near its great *Foramen*.

Use. Its Use is to assist the *Rectus major* in nodding or bowing the Head a little backwards.

OBLIQUUS SUPERIOR

Origin. Arises from the transverse Process of the first *Vertebra* of the Neck.

Insertion. Is Inserted tendinous and fleshy into the *Os petrosum* and *Occipitale*, between the backpart of the *Processus mammillaris* and the *Musculus complexus*.

Use. It serves for the oblique or semicircular motion of the Head.

This in a Dog is also double; one Muscle arises fleshy from the extremity of the transverse Process of the first Vertebra colli, the other springs from all the upper edge of the same Process, and both seem to unite about their Insertion into the Occiput.

OBLIQUUS INFERIOR

Origin. Arises fleshy from the Spinal Process of the second *Vertebra colli*, and from some part of the Body of the same next the Spine.

Is

Is Inserted into the transverse Pro- *Insertion.*
cess of the first.

Its Use is to assist the former. *Use.*

*In a Dog it arises from the edge of
the long Spine of the second Vertebra
colli.*

C H A P. XXVII.

*Of the Muscles of the NECK, that
lie on its back part.*

SPINALIS

A Rises by a great many tendinous *Origin.*
and fleshy Fibres from the five
superior transverse Processes of the *Ver-*
tebra of the Back; ascending oblique-
ly under the *Complexus*.

Is Inserted into the fifth, fourth, *Insertion.*
third, and second Spinal Processes of
the Neck.

Its Use is to extend the Neck, by *Use.*
drawing it directly backwards.

*In a Dog it much better deserves this
Name, because it accompanies all the
Spines of the Neck, arising from the
top of the first Spinal Process of the
Back, and running streight to that of
the second Spondyle of the Neck, being*

The Muscles of the Neck.

firmly fasten'd to the sides of all the intervening acute Processes.

TRANSVERSALIS

Origin. Arises tendinous and fleshy, partly from the oblique Processes of the four inferior *Vertebrae* of the Neck, and partly from the space between them and the transverse ones, being only a continuation of the same Series of Muscular Fibres that compose the Muscles of the Back, of the same name.

Insertion. Is Inserted near the Root of the superior *Spines* of the Neck; yet the uppermost Termination is not only into the *Spine* of the second *Vertebra*, but also into the Body of the same *Spondyle* laterally.

Use. Its Use is to move the Neck directly backwards, if both act; and obliquely backwards, if one only acts.

In a Dog the Insertion of this Muscle is into the Bodies of the Vertebrae of the Neck.

INTERSPINALES *Comp.*

Origin. Arise fleshy from the superior part of each double Spinal Process of the Neck, except the uppermost, which comes from the Body of the first *Vertebra*, and are

Inserted

The Muscles of the Neck.

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Inserted into the inferior part of all *Insertion.*
the said *Spines.*

Their Use is to bring these acute *Use.*
Processes near each other.

INTERTRANSVERSALES ***

The distance between the transverse
Processes of the *Vertebra's* of the Neck,
most of which are bifid or forked,
is filled up with a fleshy Substance,
arising from the Inferior, and ascending *Origin.*
to its Insertion at the Superior Process. *Insertion.*

Their Use is to approximate these *Use.*
transverse *Apophyses.*

INTERVERTEBRALES ***

They arise from the body of one *Origin.*
Vertebra laterally, and are

Inserted after an oblique Progress *Insertion.*
into the backpart of the other *Verte-*
bra immediately above it.

Their Use is to draw the Bodies of *Use.*
the *Vertebra* nearer one another, and a
little to one side.

N. B. The Number of these lit-
tle small Muscles is very uncertain,
because they vary in most Sub-
jects; the last pair, being the slen-
derest of all, are chiefly conspicuous
upon the backpart of the first and se-
cond,

cond, and second and third *Vertebra*.

In a Dog they are all larger than in Man.

C H A P. XXVIII.

Of the Muscles of the BACK.

THo' the Muscles that lie upon the *Vertebra* of the Back and Loins do appear, even in the Opinion of the great *Fallopious*, to be only a confused Mass, or indigested Heap of tendinous and fleshy Fibres, extremely intricate, and so variously interwoven one with another, that it seems very difficult, if possible, to separate them; yet in my Anatomical Exercises I always demonstrate them, having in all Subjects found them regular and uniform, fairly and distinctly divided into eighteen Muscles, nine on each side; one of which belongs to the *Thorax*, viz. the *Sacro-lumbalis*, already described; three to the Back, and five to the Loins. *Galen* and Mr. *Duverney* think it indifferent, either to reckon these Muscles, which they call *Spinales* and *Vertebrales*, as one pair only, or to multiply

ply their Number according to that of the *Vertebrae*; but in my Judgment the last would breed a great deal of Confusion, and the first shews but little of an Artist.

LONGISSIMUS

The Origin of this Muscle is in common with that of the *Sacro-lumbalis*. *Origin.*

Is Inserted into all the transverse *Insertion.* Processes of the Back by a double Tendon into each; from its outside there go off several *Fasciculi* of fleshy Fibres, interspersed with a few tendinous *Filaments*, which are soon inserted into the lower edge of most of the Ribs, not far from their *Tubercle*.

Use is to extend the *Vertebrae* of the Back, and so keep the Trunk of the Body erect. *Use.*

N. B. From the superior part of this Muscle there runs up a round fleshy Portion, which becoming tendinous, unites with the carnos part of the *Par tertium Fallopii*, which I have call'd *Trachelo-mastoidæus*.

SEMISPINALIS

Arises from the transverse Processes *Origin.* of the six or seven lowermost *Vertebrae* of the Back by so many distinct Tendons,

The Muscles of the Loins.

Tendons, which soon grow fleshy, and then becoming tendinous again, are

Insertion. Inserted tendinous into all the superior Spinal Processes of the Back, and into the lowermost Spine of the Neck.

Use. Use, to assist the following.

TRANSVERSALES DORSI INTERIORES

Origin. Arise tendinous and fleshy from the upper part of the transverse Processes of the Back; then growing all fleshy, they run over the next *Vertebra*, and are

Insertion. Inserted near the root of all its Spinal *Apophyses*.

Use. If they all act on one side, they extend the Back obliquely, or move it laterally; but if they work together, they extend the *Vertebrae dorsales* by pulling them backwards.

C H A P. XXIX.

Of the Muscles of the LOINS.

THE *Vertebrae* of the Loins are moved by five pair of Muscles.

SPINALIS *Comp.*

Origin. Arises tendinous and fleshy from the superior

superior single *Spines* of the *Os sacrum*, in common with the *Sacrolumbalis* and *Dorsi longissimus*, and

Is Inserted tendinous into all the *Insertion*.
Spinal Processes of the *Vertebrae lumborum*.

Its Use is to extend the aforesaid Use.
Vertebra.

TRANSVERSALIS LUMBORUM, vulgo
SACER

Arises fleshy from the oblique Pro-*Origin*.
cesses of the *Vertebrae* of the Loins, and

Is Inserted near the root of their *Insertion*.
Spinal ones.

Its Use is to move the *Vertebrae* Use.
lumborum after the same manner that
the *Transversales* do those of the Back.

QUADRATUS

Arises broad and tendineo-carnous *Origin*.
from the posterior part of the *Spine*
of the *Ilium*.

Is Inserted into the transverse Pro-*Insertion*.
cesses of all the *Vertebrae lumborum*,
except the last, into the first Rib, and
by a small Tendon that creeps up un-
der the *Diaphragm* into the last *Ver-*
tebra of the Back laterally.

N. B.

The Muscles of the Loins.

N. B. From the fourth, third, and sometimes the second transverse Process, there arise so many small Muscles which unite with this *Quadratus* on its inside, that respects the Cavity of the *Abdomen*.

Use.

Its Use is to move the Loins to one side, and when both act together to bend the *Vertebrae* streight forwards.

In a Dog it arises from the Spine of the Ilium internally, and ascending, adheres to all the transverse Processes of the Loins; then entering the Cavity of the Thorax, it ends tendinous and fleshy in its tenth or ninth Vertebra, counting from above downwards.

PSOAS PARVUS Riol.

Origin.

Arises fleshy from the upper *Vertebrae* of the Loins laterally.

Insertion.

Is Inserted by a long flat thin Tendon into that part of the *Os pubis*, where it joins the *Ilium*.

Use.

Its Use is to assist the *Recti Abdominis* in drawing the *Os pubis* upwards, as in raising our selves from a decumbent Posture, as Mr. *Cowper* writes. It may also serve to bend the Loins forwards; but then its beginning must be drawn from the *Os pubis*, and its
Termination

Termination be fixed in their *Vertebrae*.

This in a Humane Body is often miss'd, but never in a Dog, arising from the Bodies of the four lowermost Vertebrae dorsi, and as many of the upper Spondyles of the Loins, by so many small Tendons laterally, and fleshy from the middle of all the same Vertebrae laterally. It soon turns into a broad and thin Tendon, expanded over the great Psoas.

INTERTRANSVERSALES ***

These lie between the transverse Processes of the Loins, arising from all *Origins* the edge of one, and terminating into *Insertion* that of the other.

Their Use is to bring these *Apophyses* Use. nearer each other.

It was in a Dog that I first discovered these small Muscles, and I have never since miss'd them in the Humane Body.

C H A P. XXX.

*Of the Muscles of the HUMERUS
or ARM.*

THE *Os Humeri*, or Shoulder-Bone,
is moved by nine Muscles.

PECTORALIS

Origin.

Arises fleshy from near half the anterior part of the *Clavicula*, and from the cartilaginous endings of the fifth and sixth Ribs, where it always detaches a *fasciculus* or two of fleshy Fibres, which run down upon the Membrane that covers the *Musculus abdominis externus*, besides, it derives another Origin from almost all the length of the *Sternum* by a great many short and small Tendons, which plainly decussate those on the other side.

Insertion.

Is Inserted by two strong and broad Tendons, which cross one another, at the upper and inner part of the *Os humeri*, between the *Deltoides* and *Biceps*.

Use.

Its Use is to move the Arm upwards.

N. B. Its superior Tendon gives rise to the *Involucrum*, or tendinous Ligament.

Praelectio quinta.

ment that binds in one of the Heads of the Biceps.

In a Dog the Fibres of this Muscle run in three different directions, and may be easily divided into three Muscles.

The largest arises by an acute fleshy beginning from the Cartilago Ensigiformis, and from almost all the Sternum, and is Inserted by a short and strong Tendon into a Protuberance in the head of the Os humeri, and by a membranous Tendon into the same Bone lower down.

The second Muscle lies on the outside of this, arising from near the Extremity of the Cartilago Ensigiformis, and ascending, is partly Inserted with the former, and partly runs down upon the Muscles lying on the inside of the Humerus.

The third, which from its Position deserves the Name of Transversalis, arises from the upper part of the Breast, and crossing over the first, terminates below it, by a strong and broad Tendon, all along the forepart of the Os humeri externally.

DELTOIDES

Arises fleshy from all the posterior Origin and external part of the Clavicle that
the

The Muscles of the Arms.

the *Pectoralis* does not possess, tendinous and fleshy from the lower Margin of the forepart of the *Spina Scapulae*, and entirely tendinous from the posterior part of the same.

Insertion. Is Inserted tendinous and fleshy at a rough Protuberance in the forepart of the Arm about its middle, the Fibres of its *Apex* or Point being intermixed with some part of the *Brachieus Internus*.

Use. Its Use is to pull the Arm directly upwards, and that either somewhat forwards or backwards, according to the different direction of its Fibres.

In a Dog it arises tendineo-membranous from almost all the Spine of the Scapula; that part of it which springs from the Acromion seems to be distinct from its other Origin, but yet cannot be divided without Violence; its Action is all upwards and outwards, because it has no beginning from the Clavicle, which is wanting, to direct it inwards.

SUPRASPINATUS

Origin. Arises fleshy from all the *Basis Scapulae* that's above its *Spine*, as also from its *Spine* and upper *Costa*.

Insertion. Is Inserted tendinous into that part of the Protuberance on the head of the
Os

Os humeri that's next the Canal of the *Biceps*.

Its Use is to lift or move the Arm *Use*. upwards.

INFRASPINATUS

Arises fleshy from all that part of *Origin*. the *Basis Scapulae* that's between its Spine and its lower Angle, from the Spine as far as its *Cervix*, and from the edge of all that *Fossa* that runs above its inferior *Costa*.

Is Inserted by a thick and short Ten- *Insertion*. don into the upper part of a rough and flattish Protuberance on the head of the *Os humeri*.

Its Use is to pull the Arm directly *Use*. backwards.

N. B. On the inside of this Muscle one may observe two or three large Tendons run along its fleshy Substance.

2. This and the former are both cover'd with a tendinous Membrane, which not only strengthens their Actions, but also keeps them from swelling too much outwardly in acting.

In a Dog, through its middle lengthways, there runs a Tendon from which the fleshy Fibrillæ run off on each side, like the Stamina of a Feather.

TERES-

The Muscles of the Arm.

TERES MINOR

Origin. Arises fleshy from all the round edge of the inferior *Costa Scapula*, being in all Subjects, that ever I dissected, distinguished from the *Infraspinatus* by a very considerable Membrane.

Insertion. Is Inserted tendinous a little below the Termination of the last named Muscle, and fleshy a little lower upon the neck of the *Os humeri*.

Use. Its Use is to assist the bigger round Muscle, in bringing the Arm backwards.

In a Dog it arises by a thin Tendon, which closely adheres to the Infraspinatus from the middle of the lower edge of the Scapula, and turning into a round fleshy Belly, it passes obliquely over the head of the Longus to its tendinous Insertion.

TERES MAJOR

Origin. Arises fleshy from the inferior Angle of the *Scapula*, and from all that portion of its lower Rib, or *Costa*, that is rough and thicker than the rest, its fleshy Fibres being continued over part of the *Infraspinatus*, to which they firmly adhere.

Insertion. Is Inserted by a short broad and thin Tendon, at a roughness a little below the

the

the head of the *Os humeri* internally; and tho' 'tis very closely joined to the Tendon of the *Latissimus dorsi*, yet they part before their Insertions into that Bone.

Its Use is to move the Arm back-Use: wards and downwards.

LATISSIMUS DORSI

Arises by a thin Tendon from the *Origin* posterior part of the Spine of the *Ilium*, from the superior Spines of the *Os sacrum*, from all those of the *Vertebrae lumborum*, and from seven or eight of the lowermost ones of the Back, below the *Rhomboides*; besides, it has another Origin from the bony part of the eleventh, tenth, and ninth Rib, near their *Curvature*, by so many distinct fleshy slips. I never found it adhere to the inferior Angle of the *Scapula* by any carnosus Fibres, it being only connected by Membranes to the *Teres major* and *Rhomboides*.

Is Inserted by a strong and thin Ten- *Insertion* don upon the edge of the Channel of the *Biceps*, near the Termination of the pectoral Muscle.

Its Use is to pull the Arm back-Use: wards and downwards.

The Muscles of the Arm.

In a Dog, when this Muscle arrives at the *Teres major*, it parts with a thin fleshy Production, which running down upon the *Longus cubiti*, terminates tendinous into the *Ancon*. A little before its Insertion it receives the *Membrana carnosa*, which fleshy Pannicle or Membrane is a thin carnous Expansion which covers the Muscles that lie on the upper part of the *Os femoris*, the *Ilium* and *Sacrum*, the *Abdomen*, *Dorsum*, and most part of the *Thorax*; as it comes near the *Axilla*, it narrows and grows thicker, and then joins in with this Muscle, where it terminates. By the Contraction of its Fibres the Skin is wrinkled, and the Hairs on the Back made to stand erect when this Animal is angry or afraid.

CORACO-BRACHIALIS

Origin. Arises partly tendinous, and partly fleshy from the under side of the *Processus Coracoideus Scapulae* near its tip, adhering in its descent to one of the heads of the *Biceps*.

Insertion. Is Inserted tendineo-carnous about the middle of the internal part of the *Os humeri*, sending down a thin tendinous Expansion to the inner Condyle of that Bone.

Its

The Muscles of the Arm.

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Its Use is to lift or move the Arm *Use.*
upwards. Through this Muscle passeth a large Branch from the fourth pair of Nerves of the Neck, which constitutes the first Brachial pair.

In a Dog it's a small thin Muscle, arising from a Protuberance in the upper part of the superior Costa Scapulae by a very slender Tendon, which passing over the head of the Humerus, grows fleshy, and is so inserted into the inside of that Bone, about an Inch or more below its Neck.

SUBSCAPULARIS

Arises fleshy from all the Basis of *Origin.*
the Scapula, from all its superior Costa, and about one half of its inferior; besides, it has two tendinous beginnings arising from two little Protuberances, seated in the hollow part of this Bone near its Basis, at two or three Inches distance one from another, which Tendons are continued through the fleshy part of the Muscle to its ending, being subdivided into many more as it passes over the Juncture.

Is Inserted tendinous into the upper *Insertion.*
edge of the Protuberance, on the head of the *Os humeri* laterally.

The Muscles of the Arm.

Use.

Its Use is to bring the Arm close to the Ribs.

The Tendon of this, with that of the *Infra* and *Supra-Spinatus*, adheres firmly to the Membrane that involves the Articulation of the *Humerus* with the *Scapula*; but they may be all easily divided one from another, without cutting their tendinous Fibres.

In a Dog it only fills up three parts of the Concave or hollow part of the Scapula, the Serratus Anticus major possessing the rest.

Besides the nine pair of Muscles above described, a Dog has two more: The first I name

Levator Humeri proprius. It arises membranous and fleshy from all the space between the tendinous ending of the Mastoideus, and the ridge of the Occiput, and from the upper part of the Ligamentum colli; this large beginning contracts and grows narrower, as it runs obliquely down the Neck, closely adhering to some part of the Levator Scapulae major, and passing over the Articulation of the Humerus, goes streight down to its Insertion in the forepart of the same Bone, near the flexure of the Cubit, between the
Biceps

Biceps and Brachiaxus Internus. The second I call

Musculus ad Levatorem accessorius. It arises from the Os occipitis, near the Insertion of the thick Tendon of the Mastoidæus, and becoming a thick fleshy Muscle, runs down to its Insertion into the Levator proprius, being there of an equal breadth with it. Just above the head of the Os humeri, near the Termination of this Muscle, there's placed a small falcated cartilaginous Bone, ty'd to the Scapula and top of the Sternum by two small Ligaments, which seems to be an imperfect Clavicle.

In Cats this Muscle is inserted into the whole length of their Clavicula, which it serves to lift up. But in this Animal the use of this accessory Muscle seems calculated for the assistance of the Levator, which serves to raise the Os humeri upwards, and at the same time to turn it a little outwards, whereby the forefeet are kept from interfering or cutting one another in running or leaping.

C H A P. XXXI.

Of the Muscles of the CUBIT.

THE *Cubit* or Fore-arm, reaching from the extremity of the *Os humeri* to the Wrist, and composed of two Bones, viz. the *Ulna* and *Radius*, has five Muscles.

BICEPS INTERNUS

Origin.

Its first and outermost Head arises tendinous from the *Cervix Scapulae*, near the upper and narrow edge of its Cavity, called *Acetabulum*, which in its descent is inclosed in a Channel in the head of the *Os humeri* by a membranous Ligament that proceeds from the *pectoral* Muscle. The second or innermost arises tendinous and fleshy from the *Processus Coracoides Scapulae*. A little below the middle of the fore-part of the Arm these Heads unite.

Insertion.

Is Inserted by a strong and thick Tendon into all the *Tubercle* on the upper end of the *Radius* internally.

Use.

Its Use is to bend the *Cubit*.

N. B. About the *flexure* of the *Cubit*, or bending of the Elbow, where it

The Muscles of the Cubit.

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it begins to grow tendinous, it sends off an *Aponeurosis*, first taken notice of by that celebrated Anatomist, Mr. Cooper, vid. *Myotom. reformat.* page 147. which covers all the Muscles on the inside of the Cubit. Its Fibres decussate those of another tendinous Membrane that lies under it.

In a Dog it consists but of one head, arising from the Cervix Scapulae; and on that account I call it Flexor Cubiti Anterior, because it lies above the following Muscle.

BRACHIALIS INTERNUS

Arises fleshy from the middle of the *Origins.*
Os humeri at each side of the Termination of the *Deltoides* Muscle, filling up all the space between the two edges of this Bone.

Is Inserted by a very strong Tendon *Insertion.*
into the upper and forepart of the *Ulna.*

Its Use is to assist the former. *Use.*

In a Dog it arises broad and fleshy from the back part of the Humerus, just under its Neck; from thence it runs obliquely to the forepart of that Bone, and then proceeds as in Man.

The Muscles of the Cubit.

BICEPS EXTERNUS

Origin.

The first Head, called *Longus*, arises broad and tendinous from the *Costa Scapulae inferior*, and a little fleshy from its Neck. The second Head, called *Brevis*, arises by an acute tendinous and fleshy beginning from the *Os humeri*, about an Inch below its head. Upon the backside of the *Humerus*, these two with the following Muscle join their Fibres, and are

Insertion.

Inserted into the upper and external Process of the *Ulna*, called *Ancon*.

Use.

Its Use is to extend the *Cubit*.

BRACHIALIS EXTERNUS

Origin.

Arises by an acute fleshy beginning from the *Os humeri*, a little higher than the Insertion of the *Teres major*. About the middle of the Arm it passes under the *Longus*, with which it mixes Fibres to the external Ridge of that Bone, being continued down the same to the *Condyle* of that side, where some of its Fibres join inseparably with the *Angonaus*; the rest ending in the *Ancon*, with those of the *Longus* and *Brevis*.

N. B. The *Brachialis externus*, and the *Biceps externus*, or *Gemellus*,
make

make but one single Muscle with three Heads, to which I give the name of *Triceps Cubiti*, or *Extensor Cubiti magnus triplici principio natus*.

ANGONÆUS vel CUBITALIS Riol.

Arises by a round and short Tendon *Origin* from the back part of the external *Condyle* of the *Os humeri*; this soon grows fleshy, and is so intangled with part of the *Brachiaeus externus*, that there can be no separating them without violence.

Is Inserted fleshy and thin into the *Insertion* lateral part of the *Ulna*, a few Inches below the *Olecranon*.

Its Use is to assist in extending the *Uscubitus*.

In a Dog the extension of the Cubit, or *Ulna*, is performed by the joynt Action of five very distinct Muscles.

Extensor primus or *longus* arises as in Man, and becomes a very thick and fleshy Belly, but gradually contracting, grows tendinous, and is so Inserted into the upper and external part of that Process of the *Ulna*, called *Ancon* in Humane Bodies.

Extensor secundus or *brevis* arises from the superior and back part of the
F 5 Humerus,

The Muscles of the Cubit.

Humerus, just under its smooth Head, and descending under the Longus, turns into a small Tendon, which passing through a Sulcus in the Extremity of the Ulna, ends a little below the Longus.

Extensor tertius, which is something analogous to that head of the Triceps Cubiti, called Brachiaæus externus, is a pretty thick fleshy Muscle, arising from the upper and posterior part of the Humerus, at a Protuberance near the ending of the Teres minor; it ends in the outside of the Ancon.

Extensor quartus vel Anconæus, fills up a Cavity or Hollow between the heads of the Ulna and Radius, arising and terminating as in Man.

Extensor quintus arises by a thin Tendon from the inside of that Protuberance, into which the Supraspinatus of the Scapula is Inserted, and passing under the Tendon of the Teres major, becomes fleshy, and ends tendinous on the inside of the Ancon.

C H A P. XXXII.

Of the Muscles of the PALM of the HAND.

THE Muscles of the *Palma*, or *Vola manus*, are two.

PALMARIS LONGUS.

Arises tendinous from the internal *Origin*. Protuberance of the *Os humeri*; it soon becomes fleshy, and within a few Inches becomes tendinous again. About the *Ligamentum carpi annulare* it expands it self into a broad disgregated Tendon (giving some *Filaments* to the *Adductor pollicis*) between which and the Skin there lies a great deal of Fat. Near the lower end of the *Metacarpal* Bones it is decussated by a great many tendinous streight Fibres, which run upon it from one side to the other.

Its Insertion is by two small *Ten-* *Insertion*. dons into the sides of the Cartilage that lies upon the Articulation of each Finger, with the *Ossa metacarpi*.

Its Use is to contract the Palm of *Use*. the Hand, and so assist it to grasp any thing closely.

The Muscles of the Hand.

N. B. This Muscle does sometimes spring from the *Ligamentum annulare*.

It is wanting in a Dog.

PALMARIS BREVIS *Joan. Bapt. Can-*
nan. vel CARO QUADRATA

Origin. Arises by a Membrane-like Tendon from the superior and external part of the *Os metacarpi minimi digiti*; whence ascending obliquely, and adhering to the fourth Bone of the *Carpus* that lies upon the third, it grows fleshy in two or three places, being separated by intervening Membranes; and passing under the *Palmaris longus*,

Insertion. Is Inserted tendinous into the *Ligamentum annulare*, and into that Bone of the *Carpus* that articulates with the Thumb. The upper part of this Tendon adheres to the *Abductor pollicis*, and its lower part to the *Flexor secundi internodii ejusdem*.

Use. Its Use is to make the Palm of the Hand hollow, by drawing the Ball of the Thumb towards the *Os metacarpi*, that sustains the little Finger, and so forms what they call *Diogenes's Cup*.

This is wanting in a Dog.

C H A P. XXXIII.

Of the Muscles of the WRIST.

THE *Carpus*, or Wrist, composed of eight small Bones, situate between the Extremities of the *Ulna* and *Radius*, and the upper part of the *Metacarpal* Bones, is furnished with four Muscles; and yet all of them, as *Veslingius* remarks, terminate in the Bones of the *Metacarpus*.

FLEXOR CARPI RADIALIS

Arises tendinous and fleshy from the *Origin.* internal Protuberance of the *Os humeri*, and from the rough edge of all the anterior Process of the *Ulna*, where it firmly adheres to the *Pronator radii teres*.

Is Inserted by a flat Tendon in- *Insertion.* to the fore and upper part of the *Os metacarpi*, that joins with the fore-Finger, having run through a *Sinus* or Cavity in the Bone of the Wrist, that articulates with the Thumb, being there bound in by a Membrane which parts it from the Tendons of the other Muscles, which with it pass under the *Ligamentum annulare*. Its

The Muscles of the Wrist.

Use.

Its Use is to bend the Wrist, together with the Hand, and when it acts in Conjunction with the *Radialis Extensor*, the Wrist is moved laterally towards the *Radius*.

FLEXOR CARPI ULNARIS

Origin.

Arises tendinous from the same Tubercle of the Shoulder-bone. In its Descent, according to the Length of the *Ulna*, it's covered by a tendinous Expansion in common with the other Muscles that lie on the outside of the *Cubit*; and by this only it seems to adhere to the external Edge of that Bone.

Insertion.

Is Inserted by a short and strong Tendon into the fourth Bone of the first Rank of the *Carpus*, placed upon the third; at some distance from its Termination, there goes a Ligament from this little Bone to the *Os metacarpini minimi digiti*, which some reckon to be a Continuation only of the Tendon of this Muscle.

Use.

Its Use is to assist the former, in bending the *Carpus*.

In a Dog it makes two distinct Muscles; the largest arises tendinous from the inner Tubercle of the Humerus,
near

The Muscles of the Wrist.

III

near the Edge of the Sinus, that receives the Ulna; is inserted into the Bone of the Carpus that stands out of Rank. The lesser has a thin fleshy Origin continued from the Ancon, about an Inch down the inside of the Ulna; and terminates into the same Bone with the bigger, at some distance from it.

EXTENSOR CARPI RADIALIS

Makes two very distinct Muscles; the first which I call *Longus* or *Superior*, arises broad, thin, and fleshy, *Origin.* from the lower part of the external Ridge of the *Os humeri*, between the *Supinator radii longus* and the *Condyle*. The other, which I name *Brevis* or *Inferior*, springs tendineo-carnous from the same Protuberance of the *Os humeri*: They both lie on the outside of the *Radius*, the last continuing fleshy lower down than the first. The *Longus*

Is inserted into the upper part of *Insertion.* the Bone of the *Metacarpus*, that sustains the Fore-finger: The *Brevis* into that which stays the middle Finger; both being tendinous.

Its Use is to extend the Wrist, and Use. bring the Hand backwards.

In

The Muscles of the Wrist.

In a Dog it may properly enough be called Bicornis; because it cannot, without great Violence, be parted at its Origin.

EXTENSOR CARPI ULNARIS

Origin.

Arises tendinous from the external Protuberance of the *Os humeri*, between the *Anconæus* and *Extensor digitorum communis*, and fleshy from the upper part of the *Cubit* laterally, descending according to the length of this Bone, its round Tendon being inclosed in a Channel dug in its Extremity; from which to its Termination, it passes through a Ligament like a Sheath.

Insertion.

Is Inserted tendinous into the superior part of the *Metacarpal* Bone, that supports the little Finger.

Use.

Its Use is to assist the Muscle last described.

N. B. It is covered with a tendinous Expansion, continued down from some of the Tendons of the *Extensors* of the *Cubit*, which *Aponeurosis* is finely expanded over all the Muscles that lie on the outside of the Fore-arm, as that of the *Biceps* is on those of its inside.

When

When this and the *Flexor Ulnaris* act at once, the Wrist, with the Hand, is moved sideways towards the *Ulna*.

In a Dog it bestows a Tendon on the Bone of the Carpus, that stands upon another, on which account, this pulls the Carpus a little outwards in Extension, which is of very great Advantage to this Animal in running.

C H A P. XXXIV.

Of the Muscles of the FOUR FINGERS.

THE Muscles of the four Fingers I divide into common and proper: The *common* are such as belong to all the four Fingers, being thirteen in Number, viz. one *Extensor*, two *Flexors*, four *Lumbricales*, and six *Interossei*.

PERFORATUS

Arises tendineo-carnous from the inner Protuberance of the *Os humeri*, tendinous from the *Anterior Process* of the *Ulna*, near the Edge of its lunated Cavity, and tendineo-membranous from about the middle of the fore-

The Muscles of the four Fingers.

fore-part of the *Radius*; being so continued from near the beginning of the *Flexor pollicis magnus*, three or four Inches down that Bone: Its fleshy Belly divides into four Tendons, before it passes under the Ligament of the Wrist, and these are

Insertion. Inserted into the superior part of the second Bone of each Finger, that which goes to the little one, being by far the smallest. In the Palm of the Hand they are united to one another, and to those of the Muscle next in order by soft slimy Membranes; about the middle of the first Joint they are divided for the free Passage of the Tendons of the *Perforans*, and where they unite again one may observe a very fair Decussation of some of the tendinous Filaments of one side running a cross to the other; then subdividing, as Mr. *Cowper* has well remarked, they march for some Space upon the Edges of the Bones before they are lost upon their upper part, as I have in all Subjects observed.

Use. Its Use is to bend the second Joint of the Fingers.

In a Dog the Tendons of this Muscle are not slit for the passing of those
of.

The Muscles of the four Fingers. 115

of the Perforans, but they form a round Case as long as the first Joint, which covers those on all sides in their Passage; having only a little Hole of an Oval Figure on its outside. They end without any Subdivision.

PERFORANS

Arises fleshy from all the upper part *Origin.* of the *Ulna* laterally, being continued down its external Ridge or *Spine* to its middle, from the inner Edge and Fore-part of that Bone, and from one half of the *Ligament* that joins it to the *Radius*; the thick, superior, fleshy part of this Muscle is firmly kept in by the *Fascia Tendinosa* that covers the Muscles lying on the outside of the Fore-arm, as has been already remarked: Splitting into four Tendons a little before it passes the Transverse Ligament of the *Carpus*, they run through the Fissures or Slits made in the former Tendons, being continued farther on to their Insertion into the third Bone of all the four Fingers.

Its Use is to bend the last Joint of Use. the Fingers.

In

The Muscles of the four Fingers.

In a Dog it arises by three distinct fleshy Originations; the outermost proceeds from the upper and middle part of the Radius, the innermost arises from the upper part of the Ulna, being farther continued down most of its Edge: Both these Heads are very small; but the middlemost makes a very large big-belly'd Muscle, seemingly divided into two or three, which springs from the Internal Protuberance of the Os humeri. Those three unite and form a thick and broad Tendon, which soon splits into five small ones; four terminating as in Man, and the fifth ending in the Thumb.

LUMBRICALES

Origin.

These four Muscles arise thin and fleshy from the outside of the Tendons of the *Flexor profundus*, a little below the *Ligamentum transversale*; to which, in their Descent, they adhere for some space, but parting from thence they grow round and pretty

Insertion.

large. They terminate by long and slender Tendons, which run over the transverse cartilaginous Ligament, placed upon the Articulation of the first Bone of the Fingers, with those of the *Metacarpus*, into the broad Tendons

The Muscles of the four Fingers. 117

dons of the *Interossei*, about the middle of the first *Internode* next the Thumb laterally.

They are said to assist in bending *Use.* the first Joint of the Fingers.

EXTENSOR DIGITORUM COMMUNIS

Arises by an acute Tendon from the *Origin.* outward Extuberance of the *Os humeri*, between the *Extensors* of the *Carpus*, closely adhering to the *Supinator radii Brevis*. Before it passes under the *Ligamentum carpi*, it splits into four flat Tendons, each of which may be divided into a great many smaller. It's chiefly about the Extremity of the *Metacarpal Bones* that they remit tendinous Filaments to each other. These Tendons are

Inserted into the upper part of the *Insertion.* second Bone of each of the four Fingers, being tack'd to the first Joint in their way thither.

Its Use is to extend the first and second Joint of the Fingers.

In a Dog it runs to the last Bone of each Toe, between the two Ligaments that go from the second Internode to the third. The Use of these Ligaments is to draw the last Joint backwards

The Muscles of the four Fingers.

wards and upwards, and keep it suspended, that the extending Tendon may not always be upon the stretch, as shall be more fully explained in another place.

INTEROSSEI

Are well divided into *External* and *Internal*. The *External* fill up all the space that the Bones of the *Metacarpus* leave towards the back of the Hand: The *Internal*, which, properly speaking, deserve not the Appellation of *Interossei*, arise from the fore-part of the *Metacarpal* Bones that respects the Palm of the Hand, being only conspicuous in the *Vola*, and not in the *Dorsum Manûs*; whereas the *External* are apparent in both.

Origin.

The first *Interosseous* Muscle arises tendinous and fleshy from all the fore-part of the *Os Metacarpi Indicis*, between its Head and Condyle; as also from the upper part of the *Os Metacarpi medii digiti*. This, which is the first of the *Internal*, belongs to the side of the Fore-finger, next the middle one.

Origin.

The second, which is the first of the *External*, arises from most of the outside of the *Os Metacarpi medii digiti*,
giti,

gini, and a little tendinous from its fore-part, just under its Head, being conspicuous both towards the Back and Palm of the Hand. This runs along the side of the middle Finger next the *Index*.

The third, which is the second of *Origin*, the *External*, and runs along the other side of the middle Finger, fills up all the space between its *Metacarpal* Bone and that which supports the Ring-finger; from both which it springs, as also from some of the fore-part of this Bone laterally, being likewise very conspicuous in the Palm of the Hand.

The fourth, which is the second of *Origin*, the *Internal*, belongs to the side of the Ring-finger next the middle one, arising from all the fore-part of its *Metacarpal* Bone below its Head.

The fifth, which is the third of the *Origin*, the *External*, runs along the other side of this Finger, and fills up all the space between the *Metacarpal* Bone of this and that of the little Finger, on the back of the Hand, arising from both those Bones.

The sixth, or third of the *Inter Origin*, the *Internal*, runs along the side of the little

The Muscles of the four Fingers.

the Finger next the Ring-finger, and arises tendinous and fleshy from the Anterior Edge of all its *Metacarpal Bone*.

All these Muscles of both Kinds pass under the transverse *Cartilaginous Ligament* already described, and then each of their fleshy Bellies forms two Tendons; one is soon

Insertion. Inserted into the upper part of the first *Internode* laterally; the other is dilated very broad, so as to cover most of the first Joint adhering to the Tendon of the *Extensor*; then narrowing a little as it approaches the upper part of the second *Internode*, where the last named *Muscle* ends, it runs obliquely along that Bone to its Termination at the superior part of the last Joint of the Finger, having first joined with its Fellow of the other side.

Use.

When the long Tendons act, they extend the last *Internode*, and so supply what was wanting in the *Extensor Magnus*; and when the short ones are in Action, the Fingers are moved laterally, i. e. they are either brought nearer, or drawn further from the Thumb.

In

The Muscles of the four Fingers.

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In a Dog something analogous to these, I observe six Muscles; four of which are large, placed not between, but in the hollow of the Metacarpal Bones, and run streight down: The other two are very small, and run oblique. The large arise tendinous and fleshy from the superior part of the Metacarpal Bones adhering to the same in their Descent: At the Os sesamoidæum of the first Joint, each divides into two Tendons, and running obliquely along the sides of the Finger or Paw, they unite inseparably with the Tendon of the Extensor, near the lower part of the first Bone of each fore Toe.

The first of the two little ones belongs to the fore Toe or Index; it arises from the upper part of the Os Metacarpi medii digiti, and descending obliquely grows tendinous about the first Joint, and terminates near the middle of this Bone laterally Internally.

The second arises from the Os Metacarpi of the third fore Toe or Finger, and after an oblique Progress, ends in the inside of the first Bone of the little fore Toe. Their Use is to bring those two Toes nearer the middle ones.

G

The

The Muscles of the Fore-finger.

The proper Muscles of the Fingers are such as belong either to the fore or little Finger.

CHAP. XXXV.

Of the Muscles of the FORE-FINGER.

THE Fore-finger or *Index* has three Muscles.

EXTENSOR SECUNDI INTERNODII INDICIS PROPRIUS,
Vulgò INDICATOR.

Origin. Arises by an acute fleshy Beginning from the middle of the *Ulna*, immediately below the *Extensores Pòllicis*, turning tendinous, it passes under the same *Annular Ligament* with the *Extensor Communis*.

Insertion. Is Inserted at the upper part of the second Joint, on the inside of the *Extensor Magnus*.

Use. Its Use is to extend the Fore-finger a little obliquely.

In a Dog it's inserted into the last Joint.

EXTEN-

EXTENSOR TERTII INTERNODII
INDICIS.

Arises fleshy from all the outside of the Os Metacarpi, that sustains the Index. *Origin.*

Is Inserted by two Tendons like the Interossei, i. e. by a short one into the upper part of its first Bone laterally; and by a broad and long one into the upper part of its last Bone, being united with the Musculus Interosseus primus. *Insertion.*

The short Tendon draws the Index from the rest, and so may retain the Appellation of Abductor; the long Tendon assists this Interosseous in extending the third or last Joint of the Fore finger. *Use.*

This Muscle is wanting in a Dog.

ABDUCTOR

Arises broad and fleshy from the superior part and outside of the first Bone of the Thumb. *Origin.*

Is Inserted by a short Tendon into the upper part of the first Bone of the Fore-finger, laterally, next the Thumb. *Insertion.*

The Muscles of the little Finger.

Use.

Its Use is to bring the *Index* towards the Thumb, by drawing it from the middle Finger; whence, in respect of the *THIS*, it may be styled *Adductor*, and in respect of the *THAT* *Abductor*.

This is wanting in a Dog.

C H A P. XXXVI.

Of the Muscles of the LITTLE FINGER.

THE *Digitus Auricularis* has three proper Muscles, and one common to it with the *Extensor Communis*, reckon'd by some a proper Muscle, and named

EXTENSOR MINIMI DIGITI.

It's said to arise from the external Protuberance of the *Humerus*, and from the upper part of the *Ulna*; but in my Opinion, it ought not to be reckoned a Muscle distinct from the *Extensor Communis*, because it cannot be separated from it without cutting. Truth it is, it passes its Tendon under a *Ligamentum Annulare*, distinct from the

The Muscles of the little Finger.

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the other three Tendons, but that is far from being sufficient to constitute a particular Muscle.

All that prominent soft fleshy Mass that lies on the *Os Metacarpi minimi digiti*, in the Palm of the Hand, is called in Greek *Hypothenar*, in as much as it's placed below that part called *Thenar*. This I find always easily divisible into three Muscles, viz.

EXTENSOR TERTII INTERNODII MINIMI DIGITI

Arises fleshy, mixed with some tendinous Fibres from the Bone of the *Origin. Carpus*, that stands upon the third of the first Rank, as also from the Ligament that ties that Bone to the *Os Metacarpi* of the little Finger.

Is Inserted after the manner of the *Interossei*, i. e. by a short Tendon into the upper part of the first Bone of this Finger laterally, and by a long Tendon into the upper part of the last Bone, having join'd the *Interosseous* of the other side. *Insertion.*

Its Use is to help to extend this last *Use.* Joint, and to draw the Finger from the rest when the short one only acts.

*The Muscles of the little Finger.*ARDUCTOR MINIMI DIGITI, HYPOTHENAR *Riol.*

Origin. Arises fleshy from the thin protuberating part of the eight Bone of the Wrist.

Insertion. Is Inserted by a pretty long and round Tendon, on the inside of the short Tendon of the above described Muscle, near the upper part of the first Bone of this Finger.

Use. It serves not only to abduce the little Finger from the rest, but also to bend it a little.

FLEXOR PRIMI INTERNODII MINIMI DIGITI.

Origin. Arises tendinous and fleshy from the inferior part of the thin Edge of the eight Bone of the Wrist, and from all the inner side of the *Os Metacarpi*, that sustains this Finger: At the *Condyle* or round part of this Bone it divides into two Tendons, which are inserted on each side of the upper part of the first Bone of the Finger.

Use. Its Use is to assist in bending the first *Internode* of the little Finger.

These three are wanting in a Dog.

C H A P. XXXVII.

Of the Muscles of the THUMB.

THE Thumb, or *Pollex manus*, which is equal in strength to all the rest of the Fingers, opposite to which it is placed like another Hand, is moved by nine Muscles.

FLEXOR TERTII INTERNODII

Arises by an acute fleshy beginning *Origin* from the upper part of the *Radius*, a little below the termination of the *Biceps*, which Origin is continued down for some space on the forepart of this Bone, in a double order of short fleshy Fibres, ending in the Tendon that runs in their middle.

Is Inserted into the third or last Bone *Insertion* of the Thumb, having passed its Tendon under several annular Ligaments that come from one side of its second Bone to the other side.

Its Use is to bend this last Joint. *Use*

FLEXOR SECUNDI INTERNODII

This may be divided into two distinct Muscles, between which the
G 4 Tendon

The Muscles of the Thumb.

Tendon of the former Muscle runs. The *outermost* arises from the Bone of the *Carpus*, with which the Thumb is joined. The *innermost* arises from part of the same Bone, and also from the upper part of the *Os metacarpi indicis*, and *Medii digiti*, in common with the *Adductor*. They are both

Insertion. Inserted into the two *Ossa sesamoidæa* of the second Joint of the Thumb.

Use. Their Use is to bend this Joint or *Internode*.

FLEXOR PRIMI INTERNODII

Origin. Arises fleshy from the *Ligamentum transversale*, and the Bone of the *Carpus* that articulates with the Thumb, lying under the *Abductor*.

Insertion. Is Inserted fleshy into all the inside of the first Bone of the Thumb.

Use. Its Use is to bend this Joint.

EXTENSOR PRIMI INTERNODII

Origin. Arises fleshy from the upper and external part of the *Ulna*, immediately below the termination of the *Anconæus*, from the back part of the *Radius*, below its *Supinator brevis*, and from the *membranous Ligament* that ties these two Bones together.

Is

Is Inserted always by two, and very often by three distinct Tendons; the first is a large and round Tendon, which seems to be a bundle of a great many small ones, terminating into the upper part of the first Bone of the Thumb; the second Tendon is lost in the fleshy beginning of the *Abductor pollicis*; and the third, which in some Subjects is wanting, is implanted into that Bone of the *Carpus* that articulates with the Thumb.

Its Use is to extend the first Bone of the *Pollex*.

EXTENSOR SECUNDI INTERNODII

Arises fleshy from the back part of the *Radius*, about the middle of the fleshy Belly of the former, unto which in its descent it firmly adheres; it has a second Origin from some part of the *membranous Ligament*.

Is Inserted into the upper part of the second Bone of the Thumb.

Its Use is to extend the second *Internode*.

EXTENSOR TERTII INTERNODII

Arises by an acute tendinous and fleshy beginning from the *Ulna*, a lit-

The Muscles of the Thumb.

tle below the Origin of the first *Extensor*, as likewise from the Ligament that connects the two Bones. Its Tendon runs in a proper Channel at the Extremity of the *Radius*.

Insertion. Is Inserted into the third and last Bone of the *Pollex*.

Use. Its Use is to extend the last Joint, in bringing it backwards.

ABDUCTOR, THENAR *Riol.*

Origin. Arises by a broad tendinous and fleshy beginning from the *transverse Ligament* of the *Carpus*, and from one of its Bones that articulates with the Thumb.

Insertion. Is Inserted tendinous into the second Joint of the *Pollex digitorum manus*.

Use. Its Use is to draw the Thumb from the Fingers.

ADDUCTOR AD INDICEM, ANTITHE- NAR *Riol.*

Origin. Arises from the outside of the upper part of the *Os metacarpi indicis*.

Insertion. Is Inserted into the first Joint of the Thumb, sending of a thin Tendon, which runs along with the *Extensor pollicis longus*.

Use. Its Use is to draw the Thumb nearer the Fore-finger. Ad-

ADDUCTOR AD MINIMUM DIGITUM.

Arises a little tendinous, but chiefly *Origin.* fleshy from the whole length of the *Métacarpal* Bone, that sustains the middle Finger, from thence its Fibers contracting equally on both sides do run up to the Thumb.

Is Inserted into its second Joint, a *Insertion.* little below one of its Seed-like Bones.

Its Use is to bring the Thumb to- *Use.* wards the Ring and little Finger.

The Thumb of a Dog, or that range of Bones set off at some distance from the other Fingers or Claws, is only provided with one Extensor and one Flexor.

Extensor, the Origin, Progress and Termination of this Muscle is very little different from the Extensor tertii Internodii pollicis in Man, being a thin flat Muscle, partly tendinous, and partly fleshy, which fills up the Cavity or Hollowness between the Ulna and Radius.

Flexor is an exceeding small Muscle, which ariseth fleshy from one of the Bones of the Carpus, and ends so into the second Internode of what is analogous to a Thumb in this Animal.

C H A P. XXXVIII.

Of the Muscles of the RADIUS.

THE *Radius*, or second Bone of the *Cubit*, is bended and extended by the Muscles of that part already described in common with the *Ulna*; but besides, it has four Muscles subservient to its own Motions of *Pronation* and *Supination*.

PRONATOR TERES

Origin.

Arises fleshy from the *Os humeri*, a little above its Internal Protuberance, tendinous and fleshy from that Process, and entirely tendinous from the anterior *Apophyses* of the *Ulna*.

Insertion.

Is inserted thin and tendineo-carnous into the middle of the external part of the *Radius*.

Use.

Its Use is to turn the *Radius*, together with the *Carpus* and whole Hand inwards, and the Palm downwards; which Motion is called *Pronation*.

PRONATOR QUADRATUS

Origin.

Arises broad, membranous and fleshy from the lower and inner part of the *Ulna*, and passing transversely, Is

The Muscles of the Radius.

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Is Inserted, of the same breadth, in- *Insertion.*
to the external and lower part of the
Radius.

Its Use is to assist the former in the Use,
prone Position of the Hand.

*In a Dog it lies upon the Membrane
that joins the two Bones of the Cubit
together, to both which it adheres, and
near the lower end of the Ulna it
sends off a Tendon obliquely to the Ex-
tremity of the Radius, where it termi-
nates.*

SUPINATOR LONGUS

Arises acute and fleshy from the ex- *Origin.*
ternal Ridge of the *Os humeri*, two
or three Fingers breadth above the be-
ginning of the *Bicornis*.

Is Inserted into the external and in- *Insertion.*
ferior part of the *Radius*, near the
Carpus.

Its Use is to turn the *Radius*, &c. *Use.*
outwards, and the Palm of the Hand
upwards, which Motion is call'd *Su-
pination.*

This is wanting in a Dog.

SUPINATOR BREVIS

Arises tendinous from the external *Origin.*
Protuberance of the *Os humeri*, and
tendineo-carnous from the external and
upper

The Muscles of the Thigh.

upper part of the *Ulna*, adhering strictly to the Membrane that involves the Articulation of these two Bones.

Insertion. Is Inserted into the inside of the *Radius* above, but chiefly below, the Insertion of the *Biceps*.

Use. Its Use is to assist the former, in pulling the *Radius* backwards in the *supine Position* of the Hand.

C H A P. XXXIX.

Of the Muscles of the THIGH.

THE *Os femoris*, or Thigh-bone, has thirteen Muscles.

PSOAS MAGNUS

Origin. Arises fleshy from the Body of the lowermost *Vertebra Thoracis* laterally, from the sides of all the *Vertebrae* of the Loins by so many carnosus distinct slips, and a little tendinous from all their transverse Processes;

Insertion. Is Inserted tendinous into the lesser *Trochanter* of the *Os femoris*, and fleshy into the Bone a little below that Process.

Use. Its Use is to bend the Thigh, by bringing it forwards.

ILIA-

Praelectio sexta.

ILIACUS INTERNUS

Arises fleshy from all the internal *Origin.*
Cavity of the *Os Ilium*, and inside of
its anterior Spine, it joins in with the
former, where it begins to become ten-
dinous, in common with which it is
inserted. *Insertion.*

Its Use is to bend the Thigh, and *Use.*
bring it directly forwards in Progres-
sion.

PECTINALIS

Arises broad and fleshy from the *Origin.*
Spine, or superior and inner part of
the *Os Pubis*.

Is Inserted into the *Os Femoris*, a *Insertion.*
little below the lesser *Trochanter*, by
a flat and short Tendon.

Its Use is to bend the Thigh-bone, *Use.*
by drawing it upwards.

*In a Dog it arises by a round and
fleshy beginning from the Os Pubis, and
soon turns into a broad and thin Ten-
don, which terminates at the inner Con-
dyle of the Femur..*

GLUTEUS MAXIMUS

Arises fleshy from the upper part of *Origin.*
the *Os Coccygis*, membranous and fleshy
from all the double Spines of the *Os*
Sacrum, and one or two of its lower-
most

most single ones, from all the external edge of that Bone, below the posterior Spine of the *Os Ilium*, from two Ligaments that run from the *Ischion* to the *Os Sacrum*; i. e. one from its *Sharp Process*, the other from its *Tubercle* (over which part of this Muscle hangs in a large fold) and entirely fleshy from more than one half of the circular edge of the *Ilium*, from the rest of which forwards it springs by a thin and broad Tendon, through which one may discover part of the subjacent Muscle, inseparably joined to that of the *Membranosus*.

Insertion. Is Inserted by a large and thick Tendon into the *Femur* at a very considerable roughness at one side of the upper part of the *Linea femoris aspera*, a little below the great *Trochanter*.

Use. Its Use is to extend the Thigh, by pulling it directly backwards.

GLUTEUS MEDIUS

Origin. Arises fleshy from all the outer Lip, or edge of the Spine of the *Ilium*, except its posterior part, where it springs from the *Costa* of that Bone.

Use. Is Inserted into the breadth of the

the great *Trochanter* by a broad Tendon.

Its Use is to assist the former.

Use.

GLUTEUS MINIMUS

Arises fleshy from the lower part *Origin.* of the outer or backside of the *Os Ilium*, forwards from the edge of its anterior *Spine*, and backwards from the edge of its great *Sinus*.

Is Inserted by a large Tendon along *Insertion.* the fore and upper part of the great *Trochanter*, and by a small one into the Neck of the *Os Femoris*.

Its Use is to assist the two former Use. in extending the Thigh.

In a Dog I call the first *Gluteus*, *Externus*, it arises membranous from almost all the external part of the *Spine* of the *Ilium*, which joining with another fleshy beginning from the *Sacrum*, and from the Ligament that's extended between that Bone and the *Ischium*, it becomes altogether Carnous about the middle of the Muscle that lies under it, and terminates tendinous a little below the great *Trochanter* externally.

The second, or *Medius*, is by far the largest, and arises fleshy from all the *Spine* of the *Ilium*, filling up the hollow part

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part of that Bone, being inserted tendinous into the upper and external part of the great Trochanter.

The third, or Internus, arises fleshy from the middle of the *Os Ilium* externally, adhering in its Descent to both its sides; the superior and inner part of the great Trochanter being the place of its partly tendinous, and partly fleshy Insertion.

PYRIFORMIS *sue* *ILIACUS EXTERNUS*

Origin.

Arises thick, broad, and fleshy from the inferior part of the *Os Sacrum* next the *Ilium*; from which Bone also it derives some part of its Origin, growing gradually narrower it becomes tendinous, and

Insertion.

Is Inserted into the upper part of the Dent or Cavity, at the Root of the great Trochanter.

Use.

Its Use is to move the *Os Femoris* upwards, and turn it somewhat outwards.

MARSUPIALIS *sue* *OBTURATOR INTERNUS*

Origin.

Arises fleshy from the *Os Ilium*, *Ischium* and *Pubis* round the Internal Circumference of the great Hole common

mon to the two last named Bones. Its inside is tendinous, being divided into several small ones, which unite before its Termination.

Is Inserted tendinous into the Dent *Insertion.* or Cavity, at the Root of the great Trochanter.

Its Use is to assist the former, in *Use.* moving the *Os Femoris* obliquely, and semicircularly outwards.

GEMINI

Are two very distinct Muscles united by a carnos Membrane, both *Origin.* above and below; forming as it were a *Marsupium* or Purse for the Reception of the Tendon of the last described Muscle. The superior arises from the acute Process of the *Ischium*, and the inferior from the outer part of the Knob, or blunt Protuberance of that Bone, as also from the Ligament that runs from thence to the *Os Sacrum*. They are both

Inserted fleshy into the Cavity of *Insertion.* the great Trochanter.

Between these two small Muscles *Use.* the Tendon of the *Marsupialis* runs to its Insertion, and they serve not only to turn the *Os Femoris* outwards, but to

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to preserve that Tendon from being hurt by the Hardness of the Sinuosity of the *Ischium* which it passes through, as also to hinder it from slipping out of that Cavity, while the Muscle is in Action.

QUADRATUS FEMORIS

Origin. Arises broad, tendinous, and fleshy from the outside of the Protuberance of the *Os Ischii*, and passing transversely

Insertion. Is Inserted into the outside of the great *Trochanter*, reaching as low down as the little one.

Use. Its Use is to bring the Thigh Bone outwards.

In a Dog it arises from the Tubercle of the Ischium, and fore-part of the same Bone near the great Foramen.

TRICEPS

Under this Appellation are comprehended four very distinct Muscles, which from their Use I name, as follows;

ABDUCTOR FEMORIS PRIMUS

Origin. Arises by a strong roundish Tendon, from the upper part of the *Os Pubis*,
next

The Muscles of the Thigh.

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next the *Pectinaus* above the *Gracilis*; which turning into a compact fleshy Belly, it begins to be

Inserted tendinous about the middle *Insertion.* of the *Linea Aspera*, being continued down upon the same five or six Inches, sending out a Tendon which joins in with that of the fourth Head.

ABDUCTOR FEMORIS SECUNDUS

Arises from the *Os Pubis*, imme- *Origin.* diately under the *Gracilis*, by a broad tendinous, but chiefly fleshy beginning, and

Is Inserted into the *Linea Aspera*, *Insertion.* from a little below the lesser *Trochanter*, to the first Insertion of the last described Muscle.

ABDUCTOR FEMORIS TERTIUS.

Arises lower down than the former, *Origin.* from the outer Edge of the *Os Pubis* and *Ischium*; and running obliquely towards the *Trochanter minor*,

Is Inserted near the *Gluteus maxi-* *Insertion.* *mus.*

ABDUCTOR FEMORIS QUARTUS

Arises from the Protuberance of the *Origin.* *Ischium*, and the adjoining interior part of that Bone, by a tendinous and fleshy Origination. Is

The Muscles of the Thigh.

Insertion. Is inserted by a round and long Tendon into the upper and rough part of the inner and lower Appendix of the *Os Femoris*, being affixed to that Bone a little above the *Condyle*, as also to some part of the *Linea Aspera*.

Use. The Use of all these four Muscles is to adduce or move the Thigh-bone inwards, according to their different Directions.

OBTURATOR EXTERNUS

Origin. Arises fleshy from all the lower part of the *Os Pubis* and *Ischium*, round the outer Circumference of their great Foramen, adhering firmly to its Membrane.

Insertion. Is Inserted by a strong Tendon into a Cavity at the Root of the great Trochanter.

Use. Its Use is to turn the Thigh-bone, obliquely outwards.

In a Dog there's yet observable a small fleshy Muscle arising from the Os Ilium, near the edge of its Cavity, called Acetabulum; and running obliquely over the Articulation of the Femur, is inserted into that Bone between the Vastus Internus and Cruræus. I name it Musculus parvus in articulatione Femoris situs.

C H A P. XL.

Of the Muscles of the Os OCCYGIS.

THE Bone joined to the Extremity of the *Os Sacrum*, called *Coccyx*, has one Muscle on each side, which I call

COC CYGÆUS ***

It arises tendineo-carnous from the acute Process of the *Os Ischium*, between the Ligament that reaches from thence to the *Os Sacrum*, and one of the Heads of the *Gemini*: From this narrow Beginning it gradually dilates itself into a thin fleshy Belly, interspersed with some tendinous Fibres.

Is Inserted into the whole Length of the *Os Coccygis*, latterally.

Its Use is to draw that Bone inwards or forwards after the Excretion of hardened *Fæces*, &c.

N. B. The two Ligaments that antagonise this Pair of Muscles, shall be exactly described in my *Human and Comparative Osteology*, which I design to publish in a short time. In my Enquiry after a Muscle mentioned by the famous *Riolan*, under the Name of *Levator Ani Quintus*, which he says *Coccygi & Ossis Sacri Extremo Affigitur*, I happily discovered this Muscle.

The

The Muscles of the Leg.

The Tail of a Dog, which is only an Elongation of this Bone, is furnished with abundance of Muscles subservient to its many Motions : But with their particular Descriptions, I think it needless either to trouble my self or the Reader.

C H A P. XLI.

Of the Muscles of the LEG.

THE Leg, made up of two Bones called *Tibia* and *Fibula*, has eleven Muscles; of which, those that arise from the *Os Innomdatum*, and are inserted into either of these two Bones, are reckoned common both to the Thigh and Leg, whereas those which spring from the *Os Femoris*, and end in the *Tibia*, are accounted proper to the Leg only.

MEMBRANOSUS

Origin.

Arises by a narrow, tendinous and fleshy Beginning, from the fore-part of the Spine of the *Ilium* externally; a little below the great *Trochanter* its fleshy Belly grows wholly tendinous, and covers the two *Vasti* and *Rectus*, being firmly affixed to all the *Linea Aspera*, in its Descent. Its

Its proper Termination is into the *Insertion*.
superior Appendix of the *Tibia* laterally, between its Tubercle and the Head of the *Fibula*, sending down an Expansion to envelope the *Tibialis Anticus*. From the inside of the Thigh it is continued down upon the Leg, without any remarkable Adhesion to the Head of the *Tibia* in its way thither.

Its Use is to extend the Leg, and *Use* turn it a little outwards; and by Virtue of its large *Aponeurosis*, it mightily strengthens the Action of the Muscles, over which it is spread, by keeping them tight in their places, &c.

In a Dog it is divided into two very distinct Muscles: The superior springs from the Spine, and half the Costa of the *Os Ilium*, forming a thick fleshy Belly as it descends straight upon the *Rectus*; and about three or four Inches below its Origin, it dilates into a Membranous Tendon, by which it is inserted into the *Patella* and Head of the *Tibia*. Which Fascia or tendinous Expansion is extended and spread over that of the *Biceps*; and together with it, covers all the Muscles of the same side down to the Foot. Now the con-

The Muscles of the Leg.

rary Disposition or Decussation of the Fibres of these two Fascia's, do very much strengthen the Action and augment the Force of the Muscles that lie under them.

The Inferior arises from the lower part of the superior Costa of the Ilium, thin and fleshy, a little below that it becomes Membranous, and is expanded over the two Vasti and Rectus, firmly adhering to the inside of the Thigh bone; its tendinous Expansion joins in with that of the Gluteus Medius below the great Trochanter.

SARTORIUS

Origin.

Arises tendinous from the fore-part of the Spine of the *Os Ilium* internally, but soon becomes fleshy; and descending, runs down for some space upon the *Rectus*, and then going obliquely inwards it passes over the *Vastus Internus*, and about the middle of the *Os Femoris*, over part of the *Triceps*, between the Tendon of which and the *Musculus Gracilis* it descends farther.

Insertion.

Is Inserted tendinous into the fore-part of the *Tibia* internally, near its Spine, at a little distance from the lower part of its Appendix.

Its

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Its Use is to move the Leg oblique-^{Use.}ly, or bring one Leg and Thigh cross the other.

In a Dog it arises fleshy from the Costa near the Spine internally, and ends near the upper part of the inside of the Ridge that's in the middle of the Tibia.

RECTUS

Arises fleshy from a Tubercle in the ^{Origin.}lower part of the anterior Spine of the Ilium, and tendinous from the Costa Ilii, a little above the Acetabulum.

Is Inserted tendinous into the upper ^{Insertion.}part of the Os Patellæ.

Its Use is to extend the Leg.

In a Dog it arises tendinous and fleshy from the lower part of the Costa Ossis Ilii, and forming a large round fleshy Body descends, as in Men.

VASTUS EXTERNUS.

Arises broad, tendinous, and fleshy ^{Origin.}from the great Trochanter and upper part of the Linea Aspera.

Is Inserted into the Head of the Pa- ^{Insertion.}tella laterally.

Its Use is to extend the Leg.

^{Use.}

The Muscles of the Leg.

VASTUS INTERNUS

Origin.

Arises tendinous and fleshy from the *Os Femoris*, near the little *Trochanter*.

Insertion.

Is Inserted tendinous into the inside of the *Patella*, continuing fleshy lower down than the last.

Use.

Its Use is to extend the Leg in bringing it upwards.

N.B. From the lower Point of the *Patella* there goes a strong thick Ligament, which is affixed to a *Tubercle* on the fore and upper part of the *Tibia*; by Virtue of which, the Extension of the Leg is as easily performed as if the Tendons of the extending Muscles were inserted there.

In a Dog the Vastus Internus arises from the Neck of the Femur internally.

CRUREUS

Origin.

Arises fleshy from between the two *Trochanters* of the *Femur*.

Insertion.

Is Inserted tendinous into the *Patella* under the *Rectus*.

Use.

Its Use is to assist in the Extension of the Leg or *Tibia*.

A Dog has a fifth Extensor; which, because it must be demonstrated, first
I call

The Muscles of the Leg.

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I call Extensor Tibiæ Primus Cani Proprius. It arises from the Spine and half the Costa of the Ilium: In its Descent it adheres to the Sartorius by a Membrane, and terminates into the Patella.

GRACILIS

Arises by a thin and broad Tendon *Origin.* from the Os Pubis, near its Commissure; it soon grows fleshy, and descending by the inside of the Thigh,

Is Inserted tendinous into the inside *Insertion.* of the Tibia near the Sartorius.

Its Use is to bend the Thigh and *Use.* Leg inwards.

In a Dog it arises by a small Tendon from the Tuberosity of the Ischium, which ascends obliquely to the lower and fore-part of the Os Pubis, where going a little cross in a straight Line, it meets with that of its Fellow on the other side, whereby the two Muscles become united. Near its Termination it sends off a Tendon that runs down upon the Tibia, and also a broad membranous Expansion, which uniting with that of the Biceps and Membranosus is continued all over the Leg and Foot.

The Muscles of the Leg.

SEMINERVOSUS

Origin. Arises fleshy, in common with the longest Head of the *Biceps*, from the back-part of the Protuberance of the *Ischium*.

Insertion. Is Inserted by a flat Tendon at the inside of the Ridge of the *Tibia*, about an Inch below the Termination of the *Ligament* that comes from the *Patella*. From its Tendon, about the Head of the *Tibia*, there goes off a *tendinous Expansion* continued down over the Muscles on the inside of the Leg.

Use. Its Use is to bend the Leg backwards, and bring it a little inwards.

SEMIMEMBRANOSUS

Origin. Arises tendinous from the upper part of the Tuberosity of the *Ischium*. In its Descent it runs under the Head of the *Biceps*, between which and the former Muscle it runs down the back-side of the Thigh.

Insertion. Is Inserted tendinous into the superior and back-part of the Head of the *Tibia*, where some part of its Tendon is mixed with a Ligament that comes from the *Tibia*, and ends in both *Condyles*; or perhaps the Ligament springs from the latter, and ends in the former.

Its

The Muscles of the Leg.

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Its Use is to bend the Leg, by bringing it directly backwards.

BICEPS

This Muscle has two beginnings; *Origin.* its *superior* Head arises tendinous and fleshy in common with the *Semimervosus*, from the *Tuberosity* of the *Ischium*; the *inferior* arises from the *Linea aspera*, a little below the Termination of the *Gluteus major*, by a fleshy acute beginning, which soon grows broader as it descends to join in with the other.

Is Inserted Tendinous into the upper part of the Head of the *Fibula*, *Insertion.* part of its Tendon reaching to the head of the *Tibia* next it.

N. B. Near its Insertion it parts with a tendinous Expansion, which covers the Muscles lying on the outside of the Leg.

Its Use is to bend the Leg. *Use.*

In a Dog the thickest and largest beginning of this Muscle arises partly from the knob of the *Ischium*, and partly from a Ligament that goes from the *Os Sacrum* to the foresaid *Protuberance*. In its descent it spreads it self into a broad and fleshy Belly, which

The Muscles of the Leg.

covers part of the Gastrocnemius. The other head, which is very small, round and fleshy, arises by a long and small Tendon from the same Ligament. These two join and unite about the Ham; a little lower they grow tendinous, and are so inserted into the upper and forepart of the Ridge of the Os tibiae. This Muscle sends off a very broad and tendinous Expansion, which covers all the Muscles on the outside of the Leg, firmly adhering to the middle of the forepart of the Os tibiae in its descent to the Foot: The posterior part of this Fascia is formed into a distinct Tendon, which joining in with the Chorda magna, ends in the Os calcis.

POPLITEUS

Origin: Arises by a round Tendon from the edge of a Cavity in the lower part of the external Condyle of the Femur backwards; then running under the Ligament that involves the Joint, and strictly adhering to part of the Cartilago lunata, it becomes fleshy as it perforates the Ligament, and joins in with another fleshy beginning proceeding from the same Membrane.

Insertion. Is inserted into the superior part of the Tibia internally. Its

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Its Use is to move the Leg oblique-ly outward, and assist in bending the same.

C H A P. XLII.

Of the Muscles of the Foot.

THE Foot, or *Tarsus*, is moved by six Muscles.

EXTENSOR TARSII SURALIS, *vel* EXTENSOR MAGNUS

Is made up of four Heads or Beginnings; the two outermost form the Muscle commonly called *Gastrocnemius externus* and *Gemellus*.

One of them arises from the back *Origin* part of the internal *Condyle* of the *Femur*, and from the Bone it self, a little above it, by two thick and short Tendons. The other Head arises tendinous from a little knob on the outer *Condyle*, just above the beginning of *Popliteus*, but soon turns fleshy. A little below the Joint their carnosus Bellies unite in a middle Tendon; and below the middle of the *Tibia* it ceases to be fleshy.

The Muscles of the Foot.

Origin.

The two innermost are known by the name of *Gastrocnemius internus* and *Soleus*: One Head comes from the upper and back part of the Appendix of the *Fibula*, continuing to derive some of its fleshy *Fibrillæ* from the posterior edge of that Bone for some space below the meeting of the Tendons. The other Head springs from the back part of the *Tibia*, about the middle of the fleshy part of the *Popliteus*, and from thence it is continued down the edge of the Bone as low as the other.

The Tendons of these four Heads join, and make one great Tendon, called *Chorda magna*, and *Tendo Achillis*.

Insertion.

Is inserted into the superior and hindermost part of the *Os calcis*, which projecting beyond the *Os tibia*, occasions a considerable distance between the Tendon and that Bone. The middle and upper part of these two inferior Heads, between the Bones whence they spring, is adorn'd with a tendinous edge, in form of an Arch, under which all the great Vessels, &c. of the Leg pass.

Use.

Its Use is to extend the Foot, in bringing it backwards and downwards.

This great Extensor in a Dog has but

two

two beginnings; and those tendinous and fleshy from the two *Ossa sesamoidæ*, that adhere to the two Condyles of the Femur, and fleshy from the lower part of the same Bone.

EXTENSOR TARSII MINOR, *Vulgo*
PLANTARIS

Arises narrow, thin and fleshy from *Origin.* the upper and back part of the external Protuberance of the *Os Femoris*, adhering to the Membrane that involves the Joint in its descent. It soon becomes a long slender thin Tendon, which emerging from between the fleshy Bellies of the *Extensor magnus*, marches by the inside of its great Tendon, and

Is Inserted at the Extremity of the *Insertion.* *Os calcis*, below the *Chorda magna*, and sometimes also it ends into the same Bone by two Tendons laterally.

Its Use is to assist the former in the Use. Extension of the Foot.

In a Dog the fleshy Belly of this Muscle arises in common with the *Flexor Digitorum communis*, to which it adheres inseparably a good way down; its Tendon is very distinct, and ends in the *Os calcis*.

N. B. The tendinous Aponeurosis;

expanded over the Muscles in the bottom or Sole of the Foot, immediately under the Fat, arises by two narrow beginnings from the inferior and posterior part of the *Os calcis*, hard by the Origin of the *Musculus sublimis*. The largest adheres firmly to the fleshy part of that Muscle, its membranous edge being spread upon the adjacent *Adductor pollicis*, and is tack'd down between these two Muscles to the Bones. It splits into four Tendons, each of them being soon after subdivided into two, between which the *Flexores digitorum* pass. Is Inserted into both sides of that cartilaginous Body that covers the first Joint of the Toes. The other beginning of this *Expansio tendinosa* comes from the same Bone, but more externally, and going forwards covers one half of the *Abductor minimi digiti*, being joined to the former by a thin Tendon. Is Inserted partly into the upper part of the *Os metatarsi minimi digiti*, and partly by a long Tendon into the Extremity of the *Os metatarsi*, near its Articulation with the third Toe. Its Use is to preserve the subjacent parts from being compress'd in standing, walking, &c.

as also to assist the Flexion of the first Joint of the Toes, by pulling that cartilaginous Body downwards.

TIBIALIS ANTICUS

Arises tendinous and fleshy from the middle of the upper Appendage of the *Tibia* externally; laterally it runs down upon the outside of the *Tibia*, receiving a fleshy disgregated Origination from that Bone, near the Membrane that connects it to the *Fibula*, as also from the Membrane it self. It passes under an *annular Ligament* about the lower part of the *Tibia*.

Is Inserted by a very large Tendon into the inside of the *Os cuneiforme majus*, next the *Metatarsal* Bone of the great Toe, and by a small one into the upper part of the last named Bone laterally.

Its Use is to bend the Foot, by drawing it upwards.

In a Dog it arises fleshy from the upper and forepart of the *Tibia*, filling up all that Cavity that's between the *Extensor digitorum pedis communis*, and a thin bony Protuberance or Ridge, observable about the upper part of this Bone, to which in its descent it firmly adheres.

A little

The Muscles of the Foot.

A little below its imbanding Ligament it parts with a small Tendon, that runs upon all the Joints of the Pollex Pedis, or great Toe, which it serves to extend.

TIBIALIS POSTICUS

Origin.

Arises by a narrow fleshy beginning from the fort part of the *Os Tibia*, just under its Appendix next the *Fibula*; thence passing through a Perforation in the upper part of the Ligament that connects the two Bones, it continues its Origin from the back part of the last named Bone internally, and from near one half of the upper part of the *Tibia*, as also from the membranous Ligament between them:

Insertion.

Is Inserted, having passed through the *Fissure* at the inner Ankle, tendinous into the upper part of the *Os naviculare* internally laterally, being farther continued to the side of the *Os cuneiforme medium*; besides, it gives some tendinous Fibres to the *Os calcis*, and to the *Flexor pollicis brevis*.

Use.

Its Use is to bring the Foot inwards.

In a Dog this is but a very small Muscle, arising fleshy from the back part of the Fibula and Tibia, between the Flexor digitorum profundus, and the

the Subpopliteus; it turns into a long slender Tendon about the middle of the last named Bone; and then it unites with that of the forementioned Flexor, a little before it divides in its passage to the Toes.

PERONÆUS PRIMUS seu POSTICUS

Arises tendineo-carnous from the *Origin.* forepart of the head of the *Perone*, and soon grows into a pretty round fleshy Belly, made up of streight and compacted Fibres; it has also another beginning, by a great many thin and fleshy Fibres, from the upper and external part of the *Fibula*, where it begins to rise into a round edge, as also from the hollowness between that and its anterior Ridge. It passes its long Tendon thro' the Channel at the *inner* Ankle, *outer* together with the following; then, being reflected in the Sinuosity of the *Calcaneum*, it runs along the Cavity, made in the *Os cuboides*, under the Muscles in the sole of the Foot.

Is Inserted into the outside of the *Insertion.* superior part of the *Os metatarsi* that supports the great Toe, and by some tendinous Fibres into one of the *Ossa cuneiformia* next it.

N. B.

The Muscles of the Foot.

N. B. The cartilaginous Bone in the Tendon of this Muscle, first (I think) taken notice of by *Vesalius*, I have observed to be hollowed or sinuated, for the better Reception of a little Promuberance in the edge of the *Os cuboides*, upon which it plays, as on a Pulley.

Use.

Its Use is to move the Foot outwards, and also to bend it a little.

In a Dog it arises fleshy, and a little tendinous from the outside of the Perone, just where it begins to adhere closely to the Tibia, from some part of which it also continues a carnosus Origin; ends in the Os metatarsi that sustains the fore Toe.

PERONÆUS SECUNDUS seu ANTICUS

Origin.

Arises by an acute fleshy beginning from above the middle of the external part of the *Fibula*; it has another carnosus Origination from the outer side of the anterior Spine of this Bone, as also from its round edge externally backwards. Its Tendon passes through the *Fissure* of the external Ankle, being there included under the same Ligament with that of the following, and a little farther it runs under a particular one of its own.

Is

The Muscles of the four Toes.

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Is Inserted into the upper and fore- *Insertion.*
part of the *Os metatarsi*, that supports
the little Toe by several tendinous Fi-
laments, one or two of which are car-
ried streight down, and join in with the
Tendon that extends that Toe.

Its Use is to pull the Foot and Toes *Use.*
outwards.

*In a Dog it arises from a Protube-
rance in the head of the Tibia laterally,
next the Perone, from the upper part
of which it arises also, and then pro-
ceeds as in Man.*

CHAP. XLIII.

Of the Muscles common to the four lesser TOES.

THE Muscles of the Toes are either
common to all the four lesser
Toes, or they are proper and peculiar
to the great and little Toe, or common
to both these.

The common to all the four lesser
are fifteen in number, to wit, two
Flexors, two *Extensors*, four *Lumbri-
cales*, and seven *Interossei*.

Ex-

EXTENSOR LONGUS

Origin.

Arises by a narrow, tendinous, and fleshy Beginning from the superior and external part of the Head of the *Tibia*, next the *Fibula*, and by a fleshy Origin from the upper part of the last named Bone; dividing into four Tendons, and passing under the *Ligamentum Annulare*.

Insertion.

Is Inserted, together with the following into the upper part of the second Bone of each small Toe, sending off on both sides a small Tendon to the last Bone of the Toes, which unites with its Fellow a little before its Termination.

Use.

Its Use is to extend all the Joints of the four little Toes.

N. B. *Vesalius*'s ninth Muscle of the Foot seems to be very distinct from this *Extensor*, arising from about the middle of the *Spine* of the *Fibula*, to which the Membrane that ties it to the *Tibia* is connected, by a great many fleshy Fibres which run obliquely downward to their Tendon, not unlike the *Stamina* of a Feather. It terminates, being often divided in two or three Tendons in the upper part of

The Muscles of the four lesser Toes. 163

of the *Os Metatarsi* of the little Toe. This Muscle is not to be found in a Dog.

In a Dog the Extensor Longus springs by a round Tendon from the fore-part of the external Apophysis of the Femur, near the Channel of the Patella, and descending through a Sinus in the Head of the Tibia, it grows fleshy; and then marching down the same Bone, and passing under the Ligament that binds it in near its Extremity, it splits into four Tendons, which are inserted into the upper part of the last Bone of every Toe, near the setting on of the Claws, firmly adhering to the *Ossa Sesamoidæa* of the Joints, as it passes over them.

N. B. Here, as well as in the fore Foot, are observable two springy Ligaments that keep the last Bone of every Toe in an erect or suspended Posture, for the Conveniency of walking, and for saving of this Muscle from being always in Action. But more of this in my Comparative Osteology.

EXTENSOR BREVIS

Arises fleshy, and a little tendinous *Origin.*
from the fore-part of the *Os Calcis* externally.

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ternally, near its Conjunction with the *Cuboides*, and dilating it self into a fleshy Belly, easily divisible into four Portions, passes over the upper part of the Foot under the Tendons of the former.

Inserition. Is Inserted by four Tendons into the second Bone of the Toes.

Use. They serve to extend the Toes.

In a Dog it seems to be two distinct Muscles, of which one arises tendinous, the other fleshy, from the upper and fore-part of the Os Calcis, where it joins the Astragalus externally. The innermost soon growing fleshy, makes but one Tendon, which runs to that Toe next the great one; and about the middle of the first Joint, it loses it self in the Tendon of the Longus; The outermost gives Tendons to the rest of the Toes.

PERFORATUS seu FLEXOR SUBLIMIS

Origin. Arises by a narrow fleshy beginning from the lower protuberating part of the *Os Calcis*, between the *Abductors* of the great and little Toe; but descending, soon dilates into a thick fleshy Belly.

The Muscles of the four lesser Toes. 165

Is Inserted by four Tendons, which *Insertion.*
split, unite, decussate, subdivide, and
run close by the edges of the Bones,
like those of the Fingers, into the se-
cond Phalanx of the four lesser or
outermost Toes.

Its Use is to bend the second Joint. *Use.*

*In a Dog it ariseth fleshy from the
back-part of the external Protuberance
or Condyle of the Os Femoris, and a
little tendinous from the Os Sesamoi-
dæum, that has a loose Connection with
the same. Its fleshy Belly lies under
the Gastrocnæmius, or Extensor Sura-
lis, from whose external Head it can
scarcely be separated; but as soon as it
grows tendinous, it climbs along the Ten-
don of that Muscle down to the Os Calcis,
which it passes over, and then splits into
four thin Tendons, which form a sort of
Case with a little hole on its outside,
for the Transmission of the Tendons of
the following. About the middle of the
first Internode the half of this Involu-
crum is discontinued, and the Tendon
is inserted broad without any Division
into the beginning of the second Joint.*

N.B. In the middle of this Tendon,
as it runs over the end of the Calca-
neum, Nature has wisely placed a lit-
tle

The Muscles of the four lesser Toes.

the hard cartilaginous Body, which not only prevents that part of the Tendon from being injured by the sharp Extremity of the Bone, but also strengthens the Action of the Muscle it self; and so like a Rouler or Patella, renders its Motion more easie and glib in running.

PERFORANS seu FLEXOR PROFUNDUS

Origin.

Arises by an acute Tendon, which soon becomes fleshy from the back-part of the *Tibia*, about two or three Inches from its Head above the Termination of the *Popliteus*; which Beginning is continued down the inner Edge of this Bone by short fleshy Fibres, ending in its large Tendon. Its other Origination is by a thin and disgregated Tendon from the Edge of the *Fibula*, interspersed with abundance of *carnous Fibrilla*: Betwixt this double Order of Fibres the *Tibialis Posticus* lies inclosed. Having passed under two imbanding *Ligaments*, it marches through the Sinuosity of the *Os Calcis*, and about the middle of the Sole of the Foot divides into four Tendons, which passing through the Slits of the *Perforatus* are

Inserted

The Muscles of the four lesser Toes. 167

Inserted into the upper part of the *Insertion.*
last Bone of all the lesser Toes.

N. B. It parts with a small Tendon just before its Division, which running forwards communicates with that of the *Flexor pollicis longus*.

Its Use is to bend the Toes. *Use.*

N. B. The *Massa Carnea*, or *Musculosa Carnis Portio*, J. A. SILLY. In the Sole of the Foot may well be reckoned a third Head or Beginning of this Muscle; for it arises by a thin fleshy Origin from most part of the Sinuosity of the *Calcaneum*, which is continued forward for some space on the same Bone: Besides, it has a thin tendinous Beginning from the fore-part of the lower Protuberance of this *Os Calcis*, and soon becoming all carnous it joins in, sloping, with the Tendon of this *Flexor*, just at its Division into four Tendons. This *Moles Carnea* is wanting in a Dog.

In a Dog this Muscle arises fleshy from all the upper half of the Fibula, that stands off at a distance from the Tibia, filling up most of the space between them. It splits into five Tendons; one runs to the great Toe, which in this Animal is less than any of the four;

The Muscles of the four lesser Toes.

four; the rest pass through so many Cases, made by the Tendons of the Sublimis, to their Insertions at the third Bone of each Toe.

LUMBRICALES

- Origin.* They all arise from the Tendons of the *Perforans* at some distance from the Union of the *Massa Carnea*, with the single Tendon of that Muscle; are
- Insertion.* Inserted by four small Tendons into the inside of the first Joint of the lesser Toes, next the great Toe.
- Use.* Their Use is to assist in bending the Toes.

INTEROSSEI

- Origin.* The seven *Interosseous* Muscles have the same Situation with those in the Hand; but differ in their *Origin*, *Insertion*, and *Use*.
- Origin.* The first, or *Abductor Indicis Pedis* *Cowp.* arises from all the outside and fore-part of the *Metatarsal* Bone of the Toe, next the great one.
- Origin.* The second, or *Adductor ejusd.* fills up all the Distance between this and the *Os Metatarsi* of the middle Toe, from the sides of both which it arises.
- Origin.* The third, or *Adductor Medii Digitij ejusd.* belongs to the side of the second

second lesser Toe next the first, and is only conspicuous internally, arising from all the fore-part of this *Metatarsal* Bone, and by a few Fibres from the upper part of the first also.

The fourth, or *Abductor Medii Digiti ejusd.* which runs along the first Joint of this Toe, on the other side, arises externally from the *Metatarsal* Bone of this, and of that which supports the third Toe, filling up all the space between them.

The fifth, or *Abductor Tertii Digiti ejusd.* arises from the upper part of the *Metatarsal* Bone, that stays the third Toe, and also from the Tendon of the *Musculus Peroneus Longus*.

The sixth, which belongs to the other side of this third lesser Toe, arises from the sides of this *Metatarsal* Bone, and from that which supports the little Toe, filling up all the space between these on the back-side of the Foot. It has also a tendinous Adhesion to the long *Peronean Muscle*.

The seventh, or *Adductor Minimi Digiti ejusdem*, arises from the upper part or the *Os Metatarsi Minimi Digiti*, being also affixed to the foresaid Tendon.

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Insertion. They are all inserted partly into the *Ossa Sesamoidea*, placed on the Articulation of the first Bone of the Toes, with the *Ossa Metatarsi*, and partly on the side of the same Bone.

Use. Their Use is to move the four lesser Toes laterally; for when the *Interni* act, the Toes are drawn inwards towards the great Toe, and when the *Externi* act they are pulled nearer the little one, or are all drawn outwards from the great one.

The four streight and two oblique Muscles, situate in the Hollow of a Dog's hind Foot, run altogether conform to those already described in his fore Foot.

C H A P. XLIV.

Of the Muscles of the GREAT TOE.

THE *Pollex Digitorum Pedis*, or great Toe has six Muscles.

EXTENSOR LONGUS

Arises by an acute, tendinous, and *Origin.* fleshy Beginning from near the upper part of the *Fibula*, and from the Membrane that connects it to the *Tibia*.

Is Inserted tendinous into the upper *Insertion.* part of the last Bone of the great Toe.

Its Use is to extend that Joint by *Use.* pulling it upwards.

EXTENSOR BREVIS *Comper.*

Arises tendinous and fleshy from the *Origin.* fore-part of the *Os Calcis*, near its Articulation, with the *Astragalus*.

Is Inserted tendinous near the upper *Insertion.* part of the second Bone of the great Toe.

Its Use is to extend this *Inter-Use.* node.

The Pollex Pedis in a Dog being armed with a Claw much more hook'd

The Muscles of the great Toe.

than any of the other four Toes, is joined to one of the Bones of the Tarsus near the upper part of the Os Metatarsi, that answers the fore Toe; whence the hind Foot of this Animal does much more resemble the Hand of a Man than his fore Foot does.

This part is extended by two Muscles, one proper, which arises fleshy from the Fibula and Membrane that connects it to the Tibia: Its small Belly soon turns into a fine Tendon, which adhering to that of the Tibialis Anticus, runs on to the last Joint of this Toe, where it ends.

The other is a Tendon cast off from the Tibialis Anticus already described.

FLEXOR LONGUS

Origin.

Arises by a sharp, tendinous and fleshy Beginning from the upper and back part of the Fibula, being continued down the same Bone almost to its Extremity, passing its Tendon under a Ligament at the inner Ankle.

Insertion.

Is Inserted into the last Bone of the great Toe, giving a Tendon to the Os Calcis in its way.

Use.

Its Use is to bend this Joint.

FLEXOR

The Muscles of the great Toe.

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FLEXOR BREVIS

Arises tendinous from the *Os Cuboides* and *Os Cuneiforme* that jets out in the bottom of the Foot, it being inseparably united both with the *Adductor* and *Abductor Pollicis*.

Is Inserted into the external *Os Sesamoidæum* of the great Toe adhering to the *Adductor*.

Its Use is to bend this second Joint. Use.

In a Dog this Range of Bones is bended by a Slip cast off from the *Flexor Profundus*.

ADDUCTOR

Arises by a long thin disgregated *Origin*. Tendon, from the *Os Calcis*, under the tendinous part of the *Massa Carnea*, from the *Os Cuboides*, from the *Os Cuneiforme Medium*, near the Insertion of the *Peroneus Primus*, and from the upper part of the *Os Metatarsi* of the second Toe: It's soon dilated into a pretty large Belly.

Is inserted into the external *Os Sesamoidæum* of the great Toe.

Its Use is to bring this Toe nearer the rest. Use.

ABDUCTOR

Arises fleshy from the inside of the lower Protuberance of the *Os Calcis*

I 3

laterally

The Muscles of the little Toe.

laterally, and tendinous from a little Tubercle in the same Bone, near the *Os Cymbiforme*. It only adheres to the other Bones on the inside of the Foot, filling up the hollowness in the *Os metatarsi pollicis*.

Insertion. Is Inserted into the internal *Os sesamoidæum* of the first Bone of the great Toe, its Tendons being farther continued upon the same Bone laterally.

Use. Its Use is to pull the great Toe from the rest.

In a Dog these two last described Muscles are never found.

C H A P. LXV.

Of the Muscles of the little Toe.

THE little Toe has two Muscles.

ABDUCTOR

Origin. Arises fleshy and tendinous from the *semicircular* edge of a Cavity on the outside of the inferior Protuberance of the *Os calcis*; it has another tendinous beginning from the *Os cuboides*, and a third

The Muscles of the little Toe.

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third from the upper part of the *Oss. metatarsi minimi digiti*.

Is Inserted into the upper part of the first Bone of the little Toe externally laterally. *Insertions.*

Its Use is draw the little Toe outwards from that next to it. *Use.*

FLEXOR PRIMI INTERNODII MINIMI DIGITI *Comper.*

Arises fleshy from all the outside of the *Metatarsal* Bone that sustains this Toe, below its protuberating part; besides, it has another beginning from the Tendon of the *Peroneus primus*, as it runs in the *Sulcus* or furrow of the *Cuboides*. *Origins.*

Is Inserted into the Cartilage that's placed upon the Articulation of the first Joint of this Toe. *Insertions.*

Its Use is to bend this Joint. *Use.*

In a Dog these two are wanting.

C H A P. LXVI.

*Of the Muscle common to the great
and little TOE.*

TRANSVERSALIS PEDIS *Jul. Cass.*
Placent.

Cr. in.

ARises tendinous from the external *Os sesamoidæum* of the great Toe, firmly adhering to the tendinous part of the *Adductor pollicis*, soon growing fleshy, it passes over the Extremity of two of the *Metacarpal* Bones, between them and the *Flexores digitorum*; and then growing broader,

Insertion.

Is Inserted partly into a Tendon that proceeds from the *Expansio tendinosa*, in the Soal of the Foot, and partly into that Cartilaginous Ligament that covers the Articulation of the first Joint of the third lesser Toe with its *Os metatarsi*, some of its fleshy Fibres being continued upon the same part of the little Toe.

Use.

Its Use is to bring the third and fourth lesser Toes nearer the other two and the great one.

In a Dog there is no such Muscle.

To

To compleat the *Canine Myology*, there remain yet to be described the Muscles of the *Præputium* and *Urethra*.

The *Præputium*, which in a Man has no Muscles, is provided with one pair, and a single one in a Dog. The first I call

Præputium Adducens, which proceeds from the *Membrana Carnosa*, near the *Cartilago Eniformis*, as it descends on each side the *Linea Alba*, it grows thicker and narrower, and is inserted into the *Præputium* laterally. When this acts, I believe, it serves to bring the *Præputium* over the *Glans* after Copulation, (tho' *Blasius* affirms, that it draws the *Penis* forwards, tempore coitus) being therein much assisted by the Contraction of two Ligaments which come from about the middle of the *Linea Alba*, and end in the *Præputium*. The second is

Præputium Abducens, or *Retrahens*, which is a single small Muscle arising from the *Sphincter Ani*, and firmly adhering to the *Accelerator Urinæ*, from which it receives two fleshy slips as before noted, runs up along the *Urethra*,

178 *The Præputium and Urethra in a Dog.*

and terminates in the lower part of the Præputium, where its dilated Fibres are expanded all over it. Its Use is draw back the Præputium, and so help to denude or uncover the Glans, in order to Coition. It may likewise serve, in some measure, to dilate and keep open the Urethra at that time, lest the Seed should meet with any impediment or lett in this very long Passage.

That part of the Urethra between the Prostates and the Union of the two Corpora Cavernosa, being two or three Inches in length, according to the bigness of the Animal, is surrounded by a thin fleshy Muscle, contrived and placed there on purpose for to compress the many Glands that open within this Passage, and so oblige them to discharge their Contents, which serve as a Vehiculum to forward the descending Semen tempore coitus; to which also the Contraction of its fleshy Fibres, in narrowing this Canal, contributes in a great measure, as Mr. Cowper has well observed in Boars and in Bulls.

A N
A P P E N D I X

Concerning the Muscles of the CLITORIS and VAGINA in a Woman.

THE *Clitoris* is furnished with two pair of Muscles.

The first, discover'd by *Fallopious*,
Arises tendinous and fleshy from the *Origin*
Os Ischion internally, near its Conjunction
with the *Pubis*: In its ascent it
adheres to the inner edge of the last
named Bone, and

Is Inferred fleshy into the *Crus*, or *Insertion*
beginning of the *Clitoris*.

This Muscle, with its Partner, serve
for the erection of this part, by de-
taining the Blood in its Cavernous
Substance.

The second Muscle belonging to the *Use*
Clitoris, is by *De Graaf* very improperly
called *Sphincter Vagina*, since it does
not surround that part with circular
Fibres, tho' it has the same effect as if
it did.

The Muscles of the Clitoris

Origin.

It arises fleshy, partly from the *Sphincter Ani*, and partly from a white hardish Substance placed under the Skin in the *Perinaeum*, between the lower part of the *Pudendum* and the *Anus*; from thence it climbs up the side of the *Vagina*, near its outer Orifice, covering all the *Corpus Vaginae Vasculo-Spongiosum*, which is nothing but a Production of the *Clitoris*, and

Insertion.

Is Inserted into the Body or Union of the *Crura Clitoridis* laterally.

Use.

Its Use is the same with the preceding Muscle; and besides, by compressing the *Corpus Spongiosum*, or *Plexus Retiformis*, it serves to straiten the Orifice of the *Vagina* by hindering the Blood in its return from thence.

The *Vagina uteri* is furnished with two pair of Muscles, not mentioned by any Author, as far as I know.

Origin.

The first arises from the inner edge of the *Os Pubis*, midway between the *Ischion* and the beginning of the *Crus Clitoridis*; it ascends a little obliquely, and

Insertion.

Is Inserted into the *Vagina*.

Use.

Its Use is to dilate the Sheath, and open the Extremity of the *Meatus Urinarius*;

narius; its Termination being very high the Orifice of that Passage.

The second arises tendinous and *Origin.* fleshy from the *Os Pubis* internally, in common with the *Levator Ani.*

Is Inserted into the upper part of the *Insertion.* Vagina, at the side of the *Meatus Urinarius*, or *Collum Vesicae*.

This Acting pulls up the Vagina, and Use. so constricts the Neck of the Bladder after the Evacuation of Urine.

N. B. These Muscles can never be well raised, unless the *Os Pubis* be taken off from the *Ilium* and *Ischion*, with the *Intestinum Rectum*, the Vagina and *Vesica Urinaria* left adhering to it.

A LIST of the Muscles found
in a Human Body, that are
not met with in a Dog.

P *Pyramidalis Abdominis*
Musculus Frontalis verus
—— *Nasus Proprius seu Ri-*
naus

Elevator labiorum communis

Depressor ———

Stylo chondro-hyoidaeus

Coraco-hyoidaeus

Salpingo-staphilinus

Thyreo-staphilinus

Subclavius

Levator Ani externus

Serrator minor Anticus

Palmaris longus

—— *Brevis*

One of the Extensores Carpi Radialis

Extensor tertii Internodii Indicis

Adductor Indices

All the Muscles of the Thumb, except
one *Flexor* and one *Extensor*

All the Muscles of the little Finger,
except the *Extensor*

Supinator

The Muscles peculiar to a Dog.

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Supinator longus
Coccygeus
Tendinifosa expansio in planta pedis
Par nonum pedis Vesalii
Massa carnea in planta pedis
 All the Muscles of the great Toe, except one *Extensor*
Abductor minimi digiti
Flexor primi Internodii minimi digiti.

A List of the Muscles peculiar to a Dog.

T <i>Ransversalis Penis</i>	9
<i>Musculus oculi Suspensorius</i>	16
<i>———— Trochlea proprius</i>	17
Several Muscles of the <i>Auricle</i>	25
<i>Chondro-cerato hyoidæus</i>	33
<i>Inio-cerato hyoidæus</i>	33
<i>Musculus Epiglottis seu Hyoglottis.</i>	40
<i>Tympano-petroso-salpingo-pterigo-palatinus</i>	48
<i>Musculus in summo Thorace situs</i>	61
<i>Levator Scapulae minor</i>	71
<i>Panniculus carnosus</i>	98
<i>Levator humeri proprius</i>	100
<i>Mus-</i>	

The Muscles peculiar to a Dog.

<i>Musculus ad Levatorem accessorius</i>	101
<i>Extensor cubiti quintus</i>	106
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<i>Musculus parvus in Articulatione femoris situs</i>	142
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———— <i>abducens</i>	177
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A N

Etymological Table

OF THE

MUSCLES.

The Muscles take their NAMES

I.

*From their Action or Use.***A** *Bductor* from *Abducere*, to move or draw from.*Accelerator*, from *Accelerare*, to hasten or dispatch.*Adductor*, from *Adducere*, to move or bring towards.*Annuens*, from *Annuere*, to nod the Head forwards, as when we give our Assent to any thing.*Attollens*, from *Attollere*, to lift or raise up.*Caput concutiens*, from *Concutere*, to shake.*Constrictor*,

Constrictor, from *constringere*, to straiten or bind fast.

Cremaster, or **Suspensorius**, from *ρεμαω*, *suspendo*.

Depressor, from *deprimere*, to pull or draw down.

Detrusor Urinae, from *detrudere*, to thrust or squeez out of.

Diaphragma, from *διαφράττω*, *intersepio*, because it divides the Cavity of the **Thorax** from that of the **Abdomen**.

Dilatator, from *dilatare*, to enlarge or widen.

Distortor oris, from *distorquere*, to pull or set awry.

Extensor, from *extendere*, to extend or stretch out.

Flexor, from *flectere*, to bow or bend.

Indicator, from *indicare*, to shew or point, because that Finger is used in the demonstration of any thing.

Levator, from *levare*, to lift or pull up.

Masseter, from *μασσω*, *manduco*, *comedo*, to eat.

Pronator, from *pronus*, which denotes the posture of lying with the Face downwards; but the word is here taken for turning the Palm only downwards.

Renuens, from *renuere*, to nod the Head.

Head back when we deny or refuse any thing.

Retrahens, from *retrahere*, to draw back.

Sartorius, from the use Tailors make of it to fit cross-legg'd.

Sphincter, from *σφιγγω*, *constringo*, to shut.

Supinator, from *supinus*, which denotes that posture of lying upon the Back, with the Belly upwards; but in this case it's taken for turning the Palm only upwards.

Tensor, vide *Extensor*.

II.

From their Beginning or Origin.

Graphoides, or *Styliformis*, from *γροφίς* *stylus*, because of its supposed Origination from the Process of the Temple-Bone, so called. The *Musculus digastricus* was thus named by the Ancients.

Pectineus vel Pectinalis, from *peſſen*, i.e. *Os pubis*.

Pterigoidaeus, or *Aliformis*, from *πτερυξ*, *ala*, a Wing, and *εἶδος*, *forma*.

Sacer, from the *Os sacrum*.

Sacro-lumbalis, from the last named Bone, and from the transverse Processes of the Loins. *Semi-*

An Etymological Table

Semifibularis, from one half the *Fibula*.

Transversalis, from the transverse Processes of the Back and Neck.

Zygomaticus, from the Bone called *Ζύγωμα*, which is derived from *ζυγόν* vel *ζυγόν*, *Fugum*, a Yoke; *Os jugale*, the Yoke-bone.

III.

From their Colour.

Lividus, i. e. *pellinaeus*, from its black and blewish Colour.

IV.

From their Composition and variety of Parts.

Biceps, from its having *Bina capita*, two heads or beginnings.

Bicornis, from its having two Origins, like so many Horns.

Complexus, from its being made up of many tendinous and fleshy Fibres, intricately mixed one with another.

Complicatus is another Name for the same Muscle, having the same Etymology.

Digastricus, or *Biventer*, from *δύς* & *γαστήρ*, because it has two fleshy Bellies, with a Tendon intervening.

Gemel-

Gemini, from their being two distinct
Muscles, united only by a Membrane.

Quadriceps, from its arising by four Heads or Beginnings.

Triceps, from its arising by three Heads.

V.

*From the Course and Direction of their
Fibres.*

Obliquus.

Orbicularis.

Rectus.

Transversalis.

VI.

From their Figure or Shape.

Cucullaris, from the resemblance the lower part of this pair of Muscles has to that part of a Monk's Hood that lies between his Shoulders.

Deltoides, or *Deltiformis*, from δ ' ϵ λ τ α , the fourth Greek Letter, and ϵ ι $\omicron$ *forma*.

Fascialis, i.e. *Sartorius*, from its crossing some of the Muscles of the Thigh and Leg, like a Swath-band or *Fascia*.

Fascia,

Fascia lata, from its inclosing most of the Muscles that lie on the *Ossis femoris*.

Lumbricalis, from the likeness of their Shape to the common Earth-worm.

Marsupialis, because the *Gemini*, by some reckon'd a part of this Muscle, do form a *Marsupium*, or fleshy Purse by their membranous Connexion, through which its Tendons pass.

Pyramidalis, because it arises by a broad *Basis*, and terminates by a narrow point like a Pyramid, or Pyramidal Figure, which is broad beneath, and sharp or narrow above.

Pyriformis, from the faint resemblance it bears to a Pear.

Quadratus, from its square or quadrilateral Figure.

Rhomboides, from $\rho\omicron\mu\lambda\omicron$, a Diamond Figure, and $\epsilon\iota\delta$ *forma*, i.e. a Diamond-like Figure, whose opposite sides and opposite Angles are equal.

Rotundus, from its being round and spherical.

Scalenus, from the Figure of a Triangle, whose three sides are all unequal, called in Greek $\chi\alpha\lambda\upsilon\sigma$.

Serratus, from its being divided at its Termination into several distinct fleshy

fleshy Portions, which are not unfitly compared to the Teeth of a Saw, called *Serra* in Latin.

Soleus or *Soleus*, from *Solea* a Sole-fish.

Splenius from *Splenium*, a Ferula or rouled Splint, which Surgeons are wont to apply to the sides of a broken Bone.

Teres, from its being long and round.

Trapezius from *πάριζα*, which denotes in Geometry a kind of Quadrilateral Figure; but properly it signifies *Mensa*, a Table. Hence some call this the *Table Muscle*.

Triangularis from *Triangulum*, which is a Figure with three Corners.

VII.

From their Insertion or Termination.

Ciliaris from *Cilia*, or the soft cartilaginous Edges of the Eye-lids, into which the *Tharsi*, or Hairs are fixed.

Mastoidæus, or *Mastoides*, i. e. *Mammiformis*, from *μαστός* *uber*, *mamma* & *εἰς* *forma*.

Semispinalis, from half of the Spinal Processes of the Back.

Spinalis,

Spinalis, from several of the *Spines* of the Neck.

VIII.

From their Origin and Insertion.

Basio-Glossus from *βάσις*, the Forebone of the *Os Hyoides*, and *γλῶσσα* *lingua*, the Tongue.

Cenato-Glossus from *κέφαλον* *caput* *cor-nu* & *γλῶσσα*.

Coraco-Brachialis, from the *Processus* called *κορακοειδής*, from *κύραξ*, *κός*,

Corvus & *εἶδος* *Forma* and *Bra-chium*.

Coraco-Hyoidæus, from the last named *Process* and the *Os Hyoides*.

Crico-Arytenoidæus from *κρίκ* & *annu-lus*, and *ἀρύταινα* *Guttus* *f. Guttur-nium*, an Ewer or Cruet.

Crico-Thyreoidæus as above, and from *θυρεοειδής*, i. e. *scuti formis*.

Genio-Glossus from *γένειον* *mentum*, the Chin.

Genio-Hyoidæus as above, and from *Theos Hyoides*.

Glosso-Staphilinus from *γλῶσσα* *lingua*, and *σαφυλή* *uva*, *uvula*, *Gargareon*.

Hyothyreoidæus from the *Os Hyoides*, and *θυρεοειδής* *scutiformis*.

Mylo

Mylo-hyoidæus, from μύλοι *dentes molares*.

Occipito-frontalis, from the Occiput and the Skin of the *Os frontis*.

Palato-staphilinus, from the *Os palati* and σαφυλή *uvula*.

Salpingo-staphilinus, from σάλπιγξ, *tuba*.

Sterno-hyoidæus, from the *Os sterni* or *pectoris*.

Sterno-thyreoidæus, as above.

Stylo-chondro hyoidæus, from σύλ *stylus*, i.e. *Processus stiliformis*, from χόνδρος *cartilago*, &c.

Stylo-glossus, from σύλ *stylus* & γλῶσσα.

Stylo-hyoidæus, as above.

Thyreo-arytenoidæus, from θυρεός *scutum*.

Thyreo-staphilinus, as above:

'Tis worth observing that the first word denotes always the Origin, and the last the Insertion of the Muscle.

Trachelo-mastoidæus, from τράχηλ *collum, cervix*; its chief Origin being from the *Vertebra's* of that part.

IX.

From the Parts they belong to.

Coccygæus, from κόκκυξ *cuculus*, i.e. *Os coccygis*, a Bone so called from its Shape.

K

Oeso-

An Etymological Table

Oesophagus, from οἰσοφάγος *oesophagus*, Gula, the Gullet.

Pharyngæus, from φάρυγξ *guttur*, fauces.

Cephalo-pharyngæus, from κεφαλή *caput*.

Chondro-pharyngæus, from χόνδρος *cartilago*.

Crico-pharyngæus, from κρίκας *annulus*.

Glossa-pharyngæus, from γλῶσσα *lingua*.

Hyo-cerato-pharyngæus, as above.

Mylo-pharyngæus, from μύλοι *dentes molares*.

Prerigo-pharyngæus, from πτερυγία *ala*.

Salpingo-pharyngæus, from σάλπιγξ.

Stylo-pharyngæus, as above.

Syndesmo-pharyngæus, from συνδεσμός *vinculum, ligamentum*.

Thyreo-pharyngæus, from θυρεός *scutum*.

Rinaus, from ρίς, ρινός *nasus*.

Stapideus, from σπάς *stapes*.

X.

From the parts they constitute or compose.

Buccinator, because it makes up the greatest part of the Cheek called *Bucca*.

Gastrocnemius, from γαστήρ *venter* & κνήμη *tibia*.

Glutæus,

Glutæus, from γλῦστος *nates*.

N. B. The *Pharyngæus* with all its various Orders of Fibres, might have been described under this Head as well as in the former.

Suralis, from *sura*, the calf of the Leg.

Θέναρ *seu thenar*; thus the *Greeks* call the rising and prominent fleshy part in the Palm of the Hand, which Word seems to come from Σεῖναι *percutere, verberare*.

XI.

From their passing through some parts.

Perforans, because its Tendon passes through a Slit or Fissure in that of the *Perforatus*.

Trochlearis, from passing its Tendon through a Cartilage called *Trochlea* a Pulley.

XII.

From their Quantity or Magnitude, with respect to one another.

Brevis.

Gracilis, from its being the thinnest and slenderest Muscle of the *Tibia*.

Latissimus, from its being the broadest and largest Muscle that lies on the Back or Neck.

Longissimus, from its being the longest of those of the Back.

Longus.

Magnus.

Major.

Maximus.

Medius.

Minimus.

Minor.

Parvus.

These need no Explication.

Platysma-myoides, i. e. *expansio vel dilatio muscularis*, from $\omega\lambda\alpha\lambda\upsilon\sigma\mu\alpha$ *latum lintheum, vel aliquid simile*; or from $\omega\lambda\alpha\lambda\upsilon\sigma\mu\acute{o}s$ *dilatio* and $\mu\acute{o}s$ *musculus* & $\epsilon\acute{\iota}\delta\omicron$ *forma*.

Vastus, because it and its Fellow are the two biggest and thickest Muscles belonging to the Leg or Tibia.

XIII.

From their Situation or Position.

Angoneus vel anconeus, from $\alpha\lambda\kappa\acute{o}\nu$ *cubitus*, but in a strict Sense is taken for the Process of the Cubit called the Elbow.

Anticus, that which lies in the forepart.
Antithenar, from its Situation, which is opposite to the *Thenar*, or from its Use, which is contrary to it. *Bra-*

Brachiaus, from *βραχίον*, *brachium*.

Cruraus, from *Crus*, i. e. *femur*.

Cubitalis, } from *Cubitus*, i. e. *Ulna*.
Cubitaus, }

Externus.

Fibulaus, from *fibula*.

Hypothenar, because it's situate below the *Thenar*.

Iliacus, from the *Os ilium*.

Immersus, from its being sunk as it were under the rest of the Muscles of the *Scapula*.

Infra Spinatus, below the *Spina Scapulae*.

Intercostales, from their being placed *intercostas*, or between the *Ribs*.

Internus.

Interosseus, between the *Metacarpal* and *Metatarsal* Bones of the *Hand & Foot*.

Inter-spinales, between the *Spines* of the *Neck*.

Inter-transversales, between the transverse *Processes* of the *Neck* or *Loins*.

Inter-vertebrales, from their being placed upon and between the *Bodies* of some of the *Vertebrae* of the *Neck*.

Palmaris, from the spreading of its *Tendon* upon the *Palm* of the *Hand*.

Plantaris, from the supposed spreading of its *Tendon* upon the *Soal* of the *Foot*, under the *Skin*.

An Etymological Table.

Pectoralis, from the *Os pectoris*.

Peroneus, from the *perone*, *περὶον*, in Greek, the smallest Bone in the Leg.

Popliteus, from *poples*, the Ham.

Posticus, that is situate behind, or on the backside.

Psoas, from *ψοα*, *lumbus*, the Loins.

Radialis, } from *Radius*.

Radius, }

Subclavius, from *Clavicula*, under which it's placed.

Subscapularis, under the *Scapula*.

Supraspinatus, above the Spine of the *Scapula*.

Temporalis, from *Tempora*, the Temples.

Tibialis, } from *Tibia*.

Tibialis, }

Ulnaris, from *Ulna*.

XIV.

From their Substance.

Membranosus, because of its broad Membrane-like Tendon.

Semimembranosus, from its being half membranous.

Seminervosus, } From its being half

Semitendinosus, } tendinous.

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*An Account of what Dr. Douglas
obliges himself to perform in
a Course of Human and Com-
parative ANATOMY.*

In the OSTEOLICAL Part:

1. **T**O discourse on the *Bones, Carti-
lages, and Ligaments* in general.
2. To examine the *Bones* in parti-
cular, all of them being so prepar'd as
their inner Substance may be viewed as
well as their outer.
3. To shew the Articulations of the
Bones both in a Skeleton and in a fresh
Subject.
4. To demonstrate the *Periosteum*,
the *Medulla*, the Entrance and Exit of
the Blood Vessels, with all the *Muci-
laginous Glands* seated in or near the
Joints.
5. To compare the *Bones* of a *Fæ-
tus* with those of an Adult, and to
give

A Course of Human

give an account of their Accretion from Conception to the Birth.

6. To adjust the Difference between a Male and Female *Skeleton*.

7. To shew and describe all the *Cartilages* and *Ligaments*.

In the MYOLOGICAL Part :

1. To give the *Structure* of a *Fibre*, *Membrane* and *Muscle* in general.

2. To raise every *Muscle* in particular; shewing its *Origin*, *Progress* and *Insertion*; giving an account of its first *Discoverer*, and to whom we are obliged for its best *Description*.

In the ENTEROLOGICAL Part:

1. To give the *Division* of the *Body*, with a *Description* of its common containing *Parts*, as the *Cuticula*, *Cutis*, &c.

2. To shew all the *Viscera* contained in the *Cavity* of the *Thorax* and *Abdomen* in *situ naturali*, observing their *Situations* and mutual *Connexions* one with another, and from thence explaining several *Phænomena*, that happen in the *Practice* of *Physick* and *Surgery*.

3. To

3. To demonstrate each *Viscus* in particular.

4. To shew the Parts subservient to Generation in both Sexes, in fresh Bodies, and dried Preparations.

5. To shew the Organs of *Sense* in fresh and dried Preparations.

6. To demonstrate all the Parts of a human *Fœtus* that differ from an Adult, as the *Thymus*, *Glandula Renales*, (their numerous Vessels being all filled with different coloured Wax,) the *Funiculus* and *Vasa Umbilicalia*, the *Foramen Ovale*, *Canalis Botalli* vel *Ductus Arteriosus*, *Ductus Venosus*, &c.

7. To examine the *Placenta Uterina*, with the Membranes that involve the *Fœtus in Utero*.

IN the NEUROLOGICAL Part:

1. To discourse of the *Nerves* in general.

2. To trace all the *Nerves* that rise from the *Medulla oblongata* through the Holes in the *Cranium* to their respective Terminations in the Nose, Eyes, Ears, Tongue, Skin of the Head, and Face, Neck, and Parts contained in

in the Chest and lower Belly; and those that spring from the *Medulla Spinalis* into the Extremities where they chiefly end.

In the ADENOLOGICAL Part:

1. To explain the Structure of the *Glands* in general.
2. To demonstrate the *Brain* and *Spinal Marrow*, with all the Membranes that involve them.
3. To examine the *Salivary*, the *Mammary*, and all the other *Conglomerate Glands*, injecting the excretory Ducts of some of them with *Mercury* and *Wax*.
4. To demonstrate several of the *Lymphatick* or *Conglobate Kind*.

In the ANGIOLOGICAL Part:

1. To discourse of the *Arteries*, *Veins*, and *Lymphatick Vessels* in general, demonstrating their several Coats and Valves.
2. To fill all the *Arteries* with a *ceraceous Matter*.
3. To inject the *Sinus's* of the *Dura Mater*, and fill some of the *Veins* with
a dif-

a different colour'd Wax, and to trace the rest of them, particularly the *Azygos*, the Ramifications of the *Porta*, and those that are opened in *Vene-section*.

N. B. The above-mentioned Parts are all to be exhibited in human Bodies, most of them being likewise shewn in dried Preparations, and in describing them the following Particulars are to be considered and explained, *viz.* their Names in Greek, Latin and English, Etymology, Discoverer, Number, Situation, Connexion, Figure, Substance, Cavities, Magnitude, Membranes, or Coats, Vessels, Colour, &c. with their most probable Use. There will be added in the Demonstration of the *Viscera* and *Glands*, some Observations from dissecting *Morbid Bodies*, how they may be preternaturally affected with an Explication of the *Symptoms* that proceed from thence.

In the COMPARATIVE Part of
this Course :

I. To demonstrate and compare all the Parts of a *Quadrupede* at the same time

time with those of a *human Body*, that their different Structures may be the better observed.

2. To shew the *Vasa Lactea*, the Glands of the *Mesentery*, *Receptaculum Chyli*, *Ductus Thoracicus*, and its opening into the *Subclavian Vein*.

3. To demonstrate the four *Stomachs* of some Animal that *chews the Cud*, and to give an account of the Cause and Use of *Rumination*.

4. To shew the *Peristaltick Motion* of the Guts, and the Action of the *Diaphragm* in a Rabbit.

5. To demonstrate the *Uterus* of a Cow, with its *Coryledones*, and the Liquors and Membranes of the *Fetus* included.

6. To raise all the *Muscles* in a *Volatil*, inject its *Arteries*, and trace its *Nerves*, to examine the internal and external Structure of its *Ear*, to demonstrate the *Membrana nictitans*, and shew the Contrivance that hinders the Tendon of its Muscle from compressing the *Globe* of the Eye while it acts, with the Structure of the other Parts of the Eye. To examine the two *Stomachs*, viz. the *Ingluvies* and *Ventriculus*, or Gizzard, with the *Prolobus*

or

or *Vestibulum*, the Heart and Lungs, with the Perforations or Openings of the last mentioned into several pellucid membranous Bladders that lye between the Folds of the *Intestines*.

7. In a *Cock*, to demonstrate the *Testes*, *Kidneys*, *Ureters*, the two *Pennis's*, and *Cloaca*.

8. In a *Hen* to shew the *Ovarium*, with the *Racemi Vitellorum*, the *Oviductus* and *Uterus*.

9. To shew the Circulation of the Blood, and the *Animalcula in Semine Masculino* with Glasses.

10. To give the Anatomical Description of all the Parts of an *Oyster*, *Skait*, *Lobster*, and *Whiting*: The Structure of the Heart, and the elegant Contrivance of the *Gills* will be demonstrated in this last named Fish, with an account of the Motion of the Blood in those Animals that have but one Ventricle in their Heart.

11. To exhibit the Structure of that most *abstruse Organ of hearing* in seven or eight different *Animals*.

After a faithful and compleat Demonstration of the above-mentioned Particulars, to conclude the Course
I will

I will give a short History of the *OECONOMIA ANIMALIS*, drawn from the Structure of the Parts thus described, and comprehended under the following Heads, *viz.* Of *Mastication*, *Deglutition*, *Digestion*, *Chylification*, *Sanguification*, the *circular Motion* of the *Blood* in a *Fœtus*, and in an *Adult*, of *Nutrition*, *Secretions* of all the particular *Humors* in the *Body* from the *Massa Sanguinea*, of *Generation*, *Respiration*, *muscular* and *progressive Motion*, with an account how the *Senses* are performed, &c.

*From the Blew Boar over against the
End of Fetter-lane in Fleet-street,
September 24. 1706.*



FINIS.